SAN FRANCISCO PUBLIC LIBRARY
3 1223 01454 1636

63-14

102 Se48

Digitized by the Internet Archive
in 2025

https://archive.org/details/bwb_S0-EAJ-065

THE ESSENTIALS OF PHILOSOPHY

BY

R. W. SELLARS

ASSISTANT PROFESSOR OF PHILOSOPHY,
UNIVERSITY OF MICHIGAN

New York
THE MACMILLAN COMPANY
1917

All rights reserved

102
Le48
SAN FRANCISCO
PUBLIC LIBRARY

COPYRIGHT, 1917
BY THE MACMILLAN COMPANY
Set up and electrotyped. Published August, 1917.

63-14

3 1223 01454 1636

CONTENTS

CHAPTER I

PAGE

WHAT PHILOSOPHY IS 1

1. A Preliminary Definition. 2. The Attitude of the Philosopher. 3. The Difference between Scientists and Philosophers. 4. The Competency of the Philosopher. 5. The Older and the Newer Conceptions of Philosophy. 6. The General Philosophical Disciplines. 7. The Special Philosophical Disciplines. 8. The Topics which need Stress.

CHAPTER II

COMMON SENSE AND PHILOSOPHY 17

1. The Common-Sense View of the World. 2. Natural Realism. 3. The Recognition of Natural Realism in Philosophy. 4. Philosophy must start from Natural Realism. 5. Natural Realism and Science. 6. Natural Realism not a System. 7. Difficulties Confronting Natural Realism.

CHAPTER III

THE BREAKDOWN OF NATURAL REALISM 30

1. A Systematic Attack upon Natural Realism. 2. Perceived Objects are Functions. 3. The Physical Thing and its Appearance. 4. The Lack of Correspondent Variation. 5. The Differences between the Perceptions of Individuals. 6. Can Natural Realism account for Memory? 7. What is Perceived involves Construction. 8. The Physiological Theory of Perception. 9. Conclusion and Warning.

CHAPTER IV

REPRESENTATIVE REALISM 42

1. The Value of an Historical Approach. 2. Representative Realism follows Natural Realism. 3. Rationalistic

PAGE

Representative Realism. 4. Cartesian Metaphysics. 5. Descartes' Method. 6. Representative Realism raises New Problems. 7. Locke's Position. 8. Locke's View of Knowledge. 9. Doubts Confronting Representative Perception.

CHAPTER V

THE RISE OF IDEALISM 55

1. What is Idealism? 2. Berkeley's Position. 3. The First Stage. 4. Berkeley attacks Locke's Philosophy. 5. Berkeley's Animus. 6. Berkeley's Disproof of Representative Realism. 7. Berkeley's Construction. 8. Idealism does not change our Experience. 9. Gaps in Berkeley's System.

CHAPTER VI

SKEPTICISM 65

1. Bewilderment. 2. Hume's Summary of Results. 3. Hume's Attack upon Mental Substance. 4. Consciousness is a Flux. 5. Hume's Rejection of Berkeley's Spiritualism. 6. Taking Stock.

CHAPTER VII

THE PERIOD OF PREPARATION 74

1. Kant tries to meet Hume's Skepticism. 2. Kant Stresses Conceptual Knowledge. 3. Two Meanings of the Word Knowledge. 4. Kant and Hume Skeptical of the First Kind of Knowledge. 5. Kant's Doctrine of the Categories. 6. Kant Thinks of the Categories as Subjective.

CHAPTER VIII

THE FIELD OF THE INDIVIDUAL'S EXPERIENCE . . . 86

1. From Natural Realism to Descriptive Empiricism. 2. Whose Experience? 3. Mental Pluralism and Solipsism. 4. Kant's Appeal to Consciousness—In General. 5. The Standpoint of Descriptive Empiricism. 6. The Subject-Object Contrast. 7. The Elementary Unity of Togetherness. 8. Is the Self Dominant in the Field of Experience?

CHAPTER IX

PAGE

DISTINCTIONS WITHIN THE FIELD 98

1. Two Dimensions of the Field. 2. The Coexistential Dimension favors Realism. 3. The Temporal Dimension opposes Natural Realism. 4. Things and Ideas. 5. Sense and Imagination. 6. A Thing and the Thought of it. 7. Reflection on these Distinctions.

CHAPTER X

THE REFLECTIVE DEVELOPMENT OF THESE DISTINCTIONS . 108

1. What is a Percept? 2. The Logical Function of Perception. 3. Scientific Knowledge an Achievement. 4. A Restatement of the Distinction between Things and Ideas. 5. The False *vs.* the Correct Form of this Question. 6. Is the Distinction between Consciousness and a Realm outside Justifiable? 7. Analysis of the Term Extra-Mental. 8. A Definition of Critical Realism. 9. Theory of Knowledge needs Logic.

CHAPTER XI

THE REFERENCE OF KNOWLEDGE 122

1. Knowledge involves Judgment. 2. Judgment Defined. 3. Logic takes both Knowledge and Reality for Granted. 4. The Reference of Judgment. 5. Reference for Critical Realism. 6. Is Reality present to Thought? 7. Is each Individual Confined to his Consciousness? 8. Being distinct from Knowledge. 9. We want to be the Reality known. 10. Knowledge our only Escape from Individuality.

CHAPTER XII

TRADITIONAL ASSUMPTIONS AND ATTITUDES 135

1. Important Distinctions. 2. Rationalism. 3. Sensationalism. 4. Apriorism. 5. Empiricism. 6. Attitudes toward Knowledge.

CHAPTER XIII

PAGE

EPISTEMOLOGICAL THEORIES 146

1. The Value of an Epistemological Summary. 2. The Nature of Epistemology. 3. Idealism. 4. Objective Idealism. 5. Realism. 6. Gnostic *vs.* Agnostic Realism.

CHAPTER XIV

TRUTH AND ERROR 157

1. Knowledge and Truth. 2. The Meaning of Knowledge. 3. Three Common Theories of Truth. 4. The Correspondence Theory. 5. The Coherence Theory. 6. Pragmatism. 7. Truth as a Cognitive Value. 8. The Criteria of Truth. 8. How Non-apprehensional Realism Avoids the Copy View. 10. Knowledge is a Utility.

CHAPTER XV

MATERIALISM AND SPIRITUALISM 171

1. Epistemology and Metaphysics. 2. Materialism and Spiritualism. 3. Materialism. 4. Spiritualism. 5. Two Types of Spiritualism.

CHAPTER XVI

DUALISM AND CRITICAL NATURALISM 183

1. Natural Dualism. 2. What are Mind and Matter? 3. Why Mind and Matter are held to be distinct. 4. The Setting of Physical Science. 5. The Setting of Psychology. 6. Is this Contrast Justified? 7. Cartesian Dualism. 8. We do not Apprehend the Physical World. 9. A Monistic Interpretation of the Distinction between Consciousness and the Physical World. 10. Critical Naturalism.

CHAPTER XVII

THE WORLD AS KNOWN BY THE PHYSICAL SCIENCES: SPACE . 195

1. About the Categories. 2. Space a Category of the Physical Sciences. 3. Five Kinds of Space. 4. Sensational Space.

PAGE

5. Perceptual Space. 6. Conceptual Space. 7. Mathematical Space. 8. Is Space Infinite and Infinitely Divisible? 9. Space as a Category. 10. Is the Physical World Finite? 11. Is Consciousness Extended?

CHAPTER XVIII

TIME 205

1. About Time. 2. Three Kinds of Time. 3. Perceptual, or Personal, Time. 4. Mathematical Time. 5. Time as a Category of Scientific Knowledge. 6. Change the Objective Basis of Scientific Time. 7. Had the World a Beginning? 8. Conclusions. 9. Consciousness and Time.

CHAPTER XIX

SUBSTANCE AND SUBSTANTIALITY 216

1. The Physical World consists of Things. 2. The more Abstract Idea of Matter. 3. Descartes and Locke. 4. Empirical Things and their Attributes. 5. Knowledge-About *vs.* Being. 6. Nature is Substantial. 7. Properties express Knowledge about Nature. 8. Constant Properties. 9. Matter for Physics. 10. What is Energy?

CHAPTER XX

MIND, SOUL AND CONSCIOUSNESS 229

1. The Nature of Mind a Problem. 2. Primitive Notions of Mind. 3. Mind in Ancient Philosophy. 4. Mind in Modern Philosophy. 5. Consciousness displaces Soul. 6. Mind and Consciousness.

CHAPTER XXI

REFLECTIONS ON PSYCHOLOGY 230

1. The Subject-Matter of Psychology. 2. Orthodox Psychology. 3. The Purpose of the Psychologist. 4. A Current Paradox. 5. Psychology as the Study of Behavior. 6. The Value of Behaviorism. 7. An Inclusive Definition of Psychology. 8. What is Mind? 9. Consciousness and Mind.

CHAPTER XXII

PAGE

THE RELATION BETWEEN MIND AND BODY 252

1. The Mind-Body Problem. 2. Solutions Offered. 3. Dualistic Theories. 4. Interactionism. 5. Parallelism. 6. Epiphenomenalism. 7. Monistic Theories. 8. Psychical Monism. 9. The Double-Aspect Theory. 10. The Unity Theory. 11. What is the Mind?

CHAPTER XXIII

PURPOSE AND MECHANISM 268

1. The Presence of sharp Contrasts. 2. The Mechanical View of the World. 3. The Teleological View of the World. 4. The Present Situation. 5. The Criticism of Mathematical Rationalism. 6. The Ambiguity of the Mechanical View. 7. The Revival of Vitalism. 8. Are there Levels of Causality? 9. Efficient Causality and Purpose. 10. Is the Brain as Mind a Mechanical System? 11. How shall we Conceive of the Efficacy of Consciousness?

CHAPTER XXIV

THE PLACE OF VALUES 284

1. Knowledge and Valuation. 2. Naïve Realism and Values. 3. A Realism still more Primitive. 4. The Standpoint of Non-apprehensional Realism. 4. The Place of Values for these Levels. 5. The Science of Axiology. 6. The Objectivity of Values.

THE ESSENTIALS OF PHILOSOPHY

THE ESSENTIALS OF PHILOSOPHY

CHAPTER I

WHAT PHILOSOPHY IS

A Preliminary Definition.—Speaking in general terms, we may say that philosophy is a persistent attempt to understand the world in which we live and of which we are a part. This preliminary definition stresses the broadness of aim characteristic of philosophy. It is an effort of the intellect of man to answer fundamental problems and gain a comprehensive view of the universe.

The conception of the exact nature of philosophy has varied from period to period as man's view of the world and of his place in it has changed. Hence the history of philosophy has usually been the best index of those gradual alterations in the dominant interpretation of man and reality in which science and religion find their focus. Plato believed that a supersensible realm of ideas existed apart from the world of perceptual appearance, and his philosophy was at once a cause and an effect of this outlook. It explained what reality was and how the human mind obtained valid glimpses of it. During the Middle Ages, man was prone to consider earthly things the creation of a supernatural deity, and his philosophy was simply the earnest search for a systematic and consistent answer to such riddles as forced themselves upon his attention. In the eighteenth century, men were con-

vinced that there was an external physical world and that their knowledge of it was contingent upon the sensations produced in their minds by the stimulation of their sense-organs. Certain general problems immediately resulted, and philosophy was the persistent reflection upon these general problems. *Thus philosophy has always been reflection upon basic problems such as the nature of reality, the distinction between the apparent and the real, the conditions of human knowledge.* It has always been the conviction of the philosopher that these questions are unavoidable and that they can be solved only by intensive reflection. A definite part of our task in the present introduction will be to explain the specific nature and inevitableness of these problems with which the philosophers of all ages have busied themselves. Only in proportion as a concrete understanding of philosophical problems grows upon the student will he really understand what the veritable function of philosophy is.

The Attitude of the Philosopher.—The attitude and ideals of the philosopher are essentially the same as those of the scientist. Both have the same mental curiosity and keen desire for valid knowledge, the same willingness to bend theories into line with experience, the same faith in methodical analysis and persistent investigation and reflection. Were we defining philosophy by reference to the trained mental attitude and intellectual habits demanded, we should identify it with science. In this sense it is a science. Probably the philosopher ought to emphasize this aspect of his subject in this day in which so many people know something of the spirit of science. The philosopher at his best is inspired with the same disinterested zeal to solve intellectual problems as is the specialist in some branch of theoretical science.

In this age of early instruction in the special sciences, the student who finally comes to philosophy with mixed feelings of hope and doubt has already some acquaintance with the lives of such men as Newton, Galileo and Darwin. He knows and admires in them their whole-hearted endeavors to solve problems in the domain of nature. It is this spirit, as much as what they have accomplished in the solution of specific problems, which attracts the generous minded. We can, therefore, best convey to the beginner a true idea of the philosopher by saying that he has the outlook of the scientist. Both concern themselves with knowledge and both seek it openly and in disregard of consequences. The philosopher is not a mystic nor the champion of some esoteric cult; he is a scientist.

The Difference Between Scientists and Philosophers.—And yet there is a difference. When a man is called a scientist, we tend to ask whether he is a botanist or a physicist or a mathematician or a chemist and so on, with the other alternatives in view. We don't think of a man as being a scientist-in-general. We suppose that he is pursuing some particular kind of investigation which is easily classified as along with other lines of investigation. But to a good many a philosopher is just such a strange creature, a man who wants to be a scientist-in-general. Let us see whether we can explain the difference between the work of a specialist in science, a devotee of some particular science, and the work of a philosopher, without leaving the impression that the philosopher is a sort of jack of all trades and master of none, a man who wants to be a scientist and yet won't adopt a specific field.

The real question is this, Do the special sciences exhaust science? Philosophy is not a special science with a particular subject-matter as a field for exploitation outside

of and coördinate with the subject-matters of other special sciences. "The important distinction is that the sciences concentrate attention on particular parts or aspects of the knowable world, abstracting from the rest; while it is, in contrast, the essential characteristic of philosophy that it aims at putting together the parts of knowledge thus attained into a systematic whole; so that all the methods of attaining truth may be grasped as parts of one method; and all the conclusions attained may be presented, so far as possible, as harmonious and consistent." H. Sidgwick, *Philosophy, Its Scope and Relations*, p. 11. Philosophy has for its aim, then, not the discovery of some province which has not already been worked by the usual methods of observation, experimentation and conjecture, but the interpretation in a critical and coördinating fashion of the principles, assumptions and conclusions of the special sciences.

Philosophy attempts to round out and develop the contributions of the special sciences into a consistent view of the world and of our knowledge of it. Let us take the latter point first. All of the sciences assume that man can gain knowledge of the world; but none of them investigate the nature and conditions of knowledge. Yet surely science cannot be complete until this fundamental assumption of all science is investigated. Again, the sciences employ such concepts as space, and time, and matter, and mind, and causality without always giving a searching examination of the meanings these terms ought to have. Philosophy regards such a critical investigation of commonly used terms as imperative if a harmonious and satisfactory view of the world is to be achieved. Why? Because it has found again and again that no synthesis can be begun without running up against general problems involving

the interpretation of such terms. "What the metaphysician asserts is not that there are facts with which the various special branches of experimental science cannot deal, but that there are questions which can and ought to be raised about the facts with which they do deal other than those which experimental inquiry can solve." Taylor, *Elements of Metaphysics*, p. 9. The student will be introduced to these questions in the main part of the book and will be able to judge for himself how necessary and real they are. He will see that they are problems which can be met only by reflection. The senses and the devices of the laboratory will not help. We conclude that philosophy must not be contrasted with science but only with the particular sciences. It seeks to perform a work of supplementary reflection.

The Competency of the Philosopher.—To-day we associate science with a method, that of detailed investigation and tested conjecture. Has philosophy a method or is it forced to rely on unmethodical inspiration? Is the philosopher more like a poet than like a scientist? Much has been said about the speculative method and about speculation in a derogatory way. It is often hinted that the philosopher spins his conclusions out of his own consciousness and that they can, therefore, have little tested validity. Such statements are, however, oftenest made by those who know practically nothing about philosophical systems and, themselves, entertain the strangest ideas about the world at large. The chapters that follow must justify philosophy to the serious reader if anything can that is written in this book; but a few words can be said in anticipation of the proof by eating.

Just because philosophy is a reflective criticism and synthesis of the theoretical conclusions of the sciences, it

cannot test its conclusions by detailed facts of its own finding. It can, however, and must test them by the theories and principles put forward by the various sciences. In a very real sense, these are its data. Just as a particular hypothesis in any field must be comprehensive enough to cover all the facts, so a philosophical hypothesis must be capable of covering the better founded theories. It goes farther than this, so far as it criticises concepts and distinctions which are not well founded. The method of the philosopher is to raise necessary questions of a general character, examine the concepts employed, suggest modifications and adjustments, and so to assist the process of unification which is all the time under way. The philosopher must have a well-trained and instructed mind and be in close touch with science. The logic of his method does not differ from the logic of systematic conjecture, for even the specialist needs a creative imagination. His data are principles and distinctions which conflict more or less and must be so changed as to result in an adequate and consistent view. His speculation is reflection, and he refuses to believe that even the laboratory has made reflection unnecessary.

But the philosopher possesses a peculiar advantage by reason of his training in logic and psychology. These afford him a knowledge of knowledge and of its conditions and genesis that is extremely valuable. Why this is so will become clearer as we proceed. But a couple of points may be noted here.

Logic is a science of thinking and has given much attention to the mental processes involved in all investigation. It is an abstract science which stresses the foundations of knowledge and makes the enquirer more aware of the relative strength of the different parts of a science. There

is also a comparative side to logic. The assumptions and methods of the different types of sciences are compared. It is easy to see why training in logic gives the philosopher an advantage over the narrow specialist.

A knowledge of psychology is of advantage because it is the fundamental mental science. A thinker who knew only the physical sciences would be unable to gain as comprehensive a view of reality as one who was also acquainted with mind. We shall see that psychology throws a deal of light upon many problems.

But the philosopher has another advantage in his knowledge of past attempts at solving world-problems. Distinctions have grown up gradually which are of the greatest assistance to reflection. What men like Plato, Aristotle, Kant and Leibnitz thought cannot help but be of value to the thinker of to-day. There can be little doubt that training in the understanding of the various systems of the past develops the power of abstract thought. It likewise warns the thinker what mistakes to avoid and what concepts have been outgrown. Thus the history of philosophy gives an invaluable perspective.

The Older and the Newer Conceptions of Philosophy. —As we have hinted, philosophy is a very old subject and its view-point has changed from age to age while yet retaining a certain continuity. "The word philosophy is of Greek origin. It was first employed, not as a technical term, but as a word in general use. The reader of Herodotus will find it in the well-known story of Solon's meeting with Crœsus. Crœsus welcomes the Athenian with the remark that the fame of his wisdom and of his travels has already reached him, 'that thou, philosophizing, hast visited a vast part of the world for the sake of reflection.'

Evidently, the expression 'for the sake of reflection' intends to explain the word 'philosophizing.' What makes Solon a 'philosopher' traveller is the surprising circumstance that he does not, like the merchant or soldier, pursue a practical object in his journeys. Thucydides, Isocrates, and others use the word philosophy in a like sense, to characterize a general theoretical education as distinguished from the technical or practical one." Paulsen, *Introduction to Philosophy*, p. 20.

The first technical philosophers were men who sought to offer a general theory of reality as a whole. These men were called physicists because they speculated about the stuff and constitution of nature. Their advent was important because they were the first to turn their backs on mythology or the account of the world in terms of superpersonal agency and to assume the possibility of natural processes in an independent world. Their guesses were crude and yet daring. Sometimes, indeed, they showed a remarkable measure of insight into principles of explanation which have since been re-discovered and developed by the special sciences. The physicists were metaphysicians who did not have the precious advantage of the knowledge since painfully gleaned by the methodical investigations of science. They made rational hypotheses about nature on the basis of such experience as they could gather. Every student should read the fragments of the teaching of Heraclitus in order to realize how much a keen mind can discern by reflecting upon the broad aspects of human experience. Everything is in flux; yet there is measure and law in this constant flow of things. Later came the system of Democritus who first clearly broached the hypothesis that all things are made of atoms, of small bits of matter whose external relations can change. Even

mind was for him made up of the finer, smoother, subtler atoms. He is the first materialist.

Gradually more specific knowledge was gathered and men became more accustomed to reflective thought. Mathematics and astronomy began to grow and take shape. Observations in meteorology, medicine, anatomy, psychology were made and held together by theories. But there was little division of labor and one man often made himself master of nearly all the fields. The philosopher was the investigator and speculative genius who sought to bring such knowledge as he had into line with some unified view of the world as a whole.

As time passed, the social and mental sciences were added to the subjects investigated and theorized about by the philosopher. Such geniuses as Plato and Aristotle created wonderful intellectual systems purporting to organize together in one comprehensive view the various aspects and implications of human experience. Thus Aristotle's system covered physics, zoölogy, psychology, ethics, politics, economics, rhetoric, poetics and metaphysics. He endeavored to advance these special disciplines and yet bind them together into a system which would furnish an interpretation of the world.

For the Middle Ages, also, philosophy was synonymous with human knowledge. The philosopher was both the lover of wisdom and its possessor. Abelard, Albertus Magnus and Thomas Aquinas were learned men and keen thinkers; but the task they set themselves would appear to the man of the twentieth century impossible. How can one man ever hope to cover so many fields successfully? The reason was, of course, that knowledge was yet pretty limited in its scope. "Gil Blas, in Le Sage's famous romance, finds it possible to become a skilled

physician in the twinkling of an eye, when Dr. Sangrado has imparted to him the secret that the remedy for all diseases is to be found in bleeding the patient and in making him drink copiously of hot water. When little is known about things, it does not seem impossible for one man to learn that little. During the Middle Ages and the centuries preceding, the physical sciences had a long sleep. Men were much more concerned in the thirteenth century to find out what Aristotle has said than they were to address questions to nature. The special sciences, as we now know them, had not been called into existence." Fullerton, *An Introduction to Philosophy*, p. 9.

Modern philosophy is usually connected with the names of Francis Bacon (1561–1626) and René Descartes (1596–1650). For these men, also, philosophy was universal knowledge and included the special sciences as its parts. To-day we are more apt to make a distinction and to speak of Descartes as both a scientist and a philosopher. His chief work was entitled *Principia Philosophiæ* and consisted of four books. The first book contained a brief discussion of theory of knowledge and metaphysics; the second, the principles of mechanical physics; the third, the cosmology; the fourth, a series of physical, chemical, and physiological studies. It was believed that all these studies would converge upon a unified view of things.

During the last two centuries while the special sciences were growing as never before, they were partially estranged from philosophy. The Newtonian view of the world gave the physical sciences a setting which seemed to them fairly satisfactory, and they were, besides, engrossed in the solution of specific problems. On the other hand, the teachers of philosophy in the universities, following the trend toward specialism, had concerned themselves, in the

main, with the mental sciences and with the traditional metaphysical systems. In other words, the philosophers unconsciously became specialists by having parts of their over-broad domains removed. This was, of course, an inevitable process, but it had a momentous effect. It led, on the whole, to a temporary estrangement between science and philosophy, an estrangement which lasted the greater part of the nineteenth century. Only of late has there grown up a frank interaction between the two.

The General Philosophical Disciplines.—This interaction between science and philosophy comes out most clearly in the so-called general philosophical disciplines, metaphysics, theory of knowledge and logic.

Since the other philosophical disciplines minister to metaphysics, this discipline is often identified with philosophy. Metaphysics has for its aim the achievement of a comprehensive and consistent theory of reality. It is evident to-day that no such theory can be achieved which does not take careful account of the conclusions of the various sciences. Metaphysics would seem, then, to be an attempt to correlate the results of science with such other information about reality which it may admit and, in a way, to anticipate the course of science in the future to the degree that practical necessity and the speculative impulse dictate. We may say, then, that this branch of philosophy is distinct from the special sciences but is forced to be in intimate touch with them.

The second discipline is theory of knowledge. This branch of philosophy is practically a special science. It is the science of the nature, conditions, and reach of knowledge. What is knowledge? How is it related to consciousness? How does it tell us about reality? Can we have knowledge of a reality outside of consciousness? These

are typical questions of theory of knowledge. It is readily seen that metaphysics must be relative to the conclusions reached in this preliminary philosophical discipline. It is not too much to say that modern philosophy differs from ancient in its stress upon the necessity of theory of knowledge.

Logic covers a wide ground extending, as it does, from theory of knowledge to formal logic. The logician examines the principles of correct thinking in both ordinary argumentation and scientific investigation. The logic of science carefully investigates the methods and presuppositions of science. How are facts determined? What is the nature of explanation? What is the rôle played by hypotheses? These are a few of the questions whose answers are sought by the logician. When he further asks what is meant by *cause* and the *uniformity of nature*, by *space* and by *time*, he approaches the domain of theory of knowledge just as this other discipline shades off into metaphysics. The truth is, that there is no hard and fast line between these general philosophical disciplines. As a rule, logic does not allow itself to ask certain questions which grow out of its own investigations. And it is this restraint which separates it from theory of knowledge. Theory of knowledge, again, has definite problems which have a unity of their own. The philosopher who is working in this field concentrates his attention upon these problems, and regards the further questions which open up on their solution as metaphysical. Thus there is a continuous development from logic to theory of knowledge and thence to metaphysics.

The Special Philosophical Disciplines.—Besides these general philosophical disciplines, there are particular disciplines which are usually assigned to the philosopher. The

reason for this situation is twofold. *When we examine the history of philosophy, we find that one of its functions has always been the discovery and fostering of new special sciences.* After these have secured a healthy growth, they separate off from philosophy and adopt the characteristic methods of empirical investigation. But philosophy usually retains an interest in the problems which they represent and is constantly making suggestions as to the larger bearings of these problems. At the same time, many of these special disciplines involve the mental sciences, in which realm the philosopher is peculiarly at home because of his training in logic and psychology. Where there is a recognized division of labor between the special investigator and the philosopher, the function of the philosopher is to study the general principles involved and the relation of the field to other fields, while the investigator, who is more apt to think of himself as a scientist, gathers and organizes his data.

Ethics, or moral philosophy, is a special philosophical discipline which has the science of ethics as its scientific counterpart. It is the philosophy of conduct, and examines those principles which underlie the distinction between good and bad, right and wrong. The teachers of this discipline seek to be both investigators and philosophers. In other words, they usually try to unite in themselves the double function of philosophy and science.

Political philosophy has a history similar to that of ethics. It was a discipline nourished by philosophy and still retaining this old connection. Alongside of it has grown up political science which deals with the empirical facts and established principles of that aspect of human relations. Here, again, a division of labor has developed. Philosophy concerns itself more with the fundamental

principles and distinctions, while political science keeps its feet planted pretty firmly on the ground of concrete fact.

Æsthetics is, once more, both the science and the philosophy of the beautiful. Just because the human element in art is so large, æsthetics is inevitably a philosophical discipline. It raises questions of value which lead on into the farthest reaches of human life.

These special disciplines concern themselves primarily with human life. They deal with values and aspirations.

The Topics Which Need Stress.—So many subjects are touched upon by philosophy that it is a matter of some difficulty to know just what to stress in an introductory work. There is the temptation to cover all the philosophical disciplines in a cursory manner, giving here a short summary of the problems of theory of knowledge, there a description of various metaphysical positions, in the next section a brief discussion of ethics and ending with a hasty account of æsthetics and philosophy of religion. It is, however, my own conviction that it is far better to present a pretty thorough discussion of the general basic disciplines, theory of knowledge and metaphysics, which underlie all the others. There are introductory courses in ethics, logic and æsthetics which deal with these special philosophical disciplines in a far more satisfactory manner than a general introduction could do. An introduction to philosophy is therefore more and more coming to mean an introduction to those general problems which confront all knowledge. He who has wrestled with these can face the more empirical questions of the secondary philosophical subjects with equanimity.

Acting upon this decision not to scatter our attention

over too wide and heterogeneous a field, we shall concentrate, first, upon the problems of theory of knowledge and, then, upon those of metaphysics or ontology. We shall, I believe, become convinced that the answer to ontological problems depends in a larger measure than has been acknowledged upon the answer given to epistemological problems. Only the final chapter will concern itself with values.

The method we shall use may be called the genetic for want of a better name. We shall begin with a description of the outlook of ordinary experience and gradually pass, as the facts warrant, to a more critical position. We shall not make definitions or doctrinaire assumptions our starting-point as has too often been done. In order to make use of the genuine contributions of past thinkers in the way of discovering what assumptions have led into blind alleys and what have further possibilities in them, we shall consider in some detail the systems of a few pivotal writers. But the history of philosophy will always be kept subordinate to the main purpose, that of a clear and consistent statement of problems and their solutions, so far as solutions are realizable.

He who wishes to profit from work in philosophy must be willing to live into the subject and to make it his intimate companion. He must try to grasp abstract distinctions and follow out their implications in a persistent way. For such a one the reward is very great. The world becomes clothed with deeper meaning, and man's mind opens up depths which are otherwise hidden from view. The secret of the universe is not open to casual inspection. I venture to predict that the student will have a quite different view of the world he lives in before he has mastered many of the following chapters.

References

Calkins, *The Persistent Problems of Philosophy*, chap. 1.
Fullerton, *Introduction to Philosophy*, chap. 1.
James, *A Pluralistic Universe*, chap. 1.
Jerusalem, *Introduction to Philosophy*, First Division.
Külpe, *Introduction to Philosophy*, chaps. 1 and 4.
Paulsen, *Introduction to Philosophy*, Introduction.
Santayana, *The Life of Reason*, 1.1–32.
Sidgwick, *Philosophy, Its Scope and Relations*, lectures 1 and 2.
Taylor, *Elements of Metaphysics*, chap. 1.

CHAPTER II

COMMON SENSE AND PHILOSOPHY

The Common-Sense View of the World.—The outlook upon the world which people have before they study science or philosophy very deeply may be called that of common sense. Certain distinctions are accepted as a matter of course, although they are not worked out clearly or in detail. Every one is aware of and uses the contrast between the mental and the physical, between himself as a perceiver and the objects which he perceives, between himself and others. Nature is, again, a term for a perdurable realm about whose history something is known and which will outlast the human beings who come and go upon its surface. It would be foolish for the philosopher to attempt to belittle this knowledge which hard experience has forced upon mankind. The plain man knows as well as the scientist, the poet as well as the philosopher, certain elementary and brutal truths about man's place in nature. The latest dramatist but repeats what Sophocles already knew. Man is so obviously only a part of a larger whole.

We have good reason to believe that the common distinctions we all make are the result of adjustments and experiences which could have led to no other conclusions. I sit in my study and listen to the sounds which come to me from the street. They mean to me a busy life of traffic and enterprise. I pick up a newspaper and read about the course of the war in Europe, about a destructive earth-

quake in Italy, about the completion of a railroad in Alaska. I divert myself in the evening after the day's work by reading a chapter in Gibbon's History. Thus I distinguish the past history of peoples from their present, the physical world and its catastrophes from the activities of men. I can picture to myself the quiet scenery around the Huron or lose thought of myself in following the adventures of such a remarkable man as Napoleon.

Common sense would, then, seem to present an organization of many and diverse experiences into a stable world of objects and events classified, on the whole, in a satisfactory way. The individual can no more escape from these classifications and distinctions than he can from his feelings of pleasure and pain. To develop them is possible, as science has proved, but to ignore them strikes us all as impossible and even unthinkable. When the spring comes, I look in the cellar for the spade I placed there last fall, find it and go out to dig up the soil and prepare it for the seed I intend to plant. As a matter of course, I assume the reality of all these objects and of the relations between them. At every moment in the day, I am called upon to make adjustments to my surroundings and to other people, and it does not enter my head to doubt that they are as real as myself. I am one among many in a tremendously large and complex world.

Natural Realism.—The plain man is a realist. He perceives what he unhesitatingly calls physical things and reacts to them in established ways. He lives among these perceived things adapting himself to them and making them his instruments. Physical things are out there in space away from his body yet in relations with it. Other individuals can see the same things in much the same

way, for they are independent and open to inspection through the sense-organs. There the things are, quite unaffected by his seeing them.

But we must modify this dominant view somewhat. Common sense is always naïvely realistic whenever there is no pressing reason why it should cease to be so. And this is the situation in the vast majority of cases. "When we see a tree we think that it is really green and really waving about in precisely the same way as it appears to be. We do not think of our object of perception being 'like' the real tree, we think that what we perceive is the tree, and that it is just the same at a given moment whether it be perceived or not, except that what we perceive may be only a part of the real tree." Broad, *Perception, Physics and Reality*, p. 1.

The physical world is, then, regarded as common to all observers and independent for its existence and properties of this intermittent inspection. When we try to discover what the plain man means by perceiving, we are left with the impression that it is of the nature of an event in which the independent object is revealed to the individual. The only condition of this event which is clearly recognized is the use of the sense-organs. He who does not have eyes cannot see things. But, however conditioned, perceiving is an event in which the physical world, itself, is present in his field of vision. The individual opens his eyes and turns them in this or that direction, and at once definite things are present to his conscious self. In large measure, seeing would appear to be simply a name for this fact of presence, of openness to observation when the eyes are used, just as hearing is a name for the presence of sounds when the ears are stimulated. Perceiving is a more general term having a less definite reference to any one of the senses.

It would seem, therefore, not to explain anything but just to describe a fact.

Common sense has no reflective theory of the nature and conditions of the event which it calls perceiving a thing. Certainly there is no awareness of the activity of any peculiar ego or self from which energy goes forth to touch the thing and, as it were, light it up. We see what is around us, and we who see these things are concrete individuals not so very different from the things we see. Probably, the plain man of to-day accepts the teachings of science in the main and has some thought that the sense-organs must be stimulated and these stimulations carried to the central nervous system. But just why this physical process should lead to the vision of the physical world out there in space he does not know.

Again, common sense has developed and possesses certain meanings which it firmly and automatically attaches to these perceived objects. They are independent of the event of perception, which is a purely human affair. We cannot stare rocks and trees out of countenance though we may break them into pieces by means of dynamite judiciously planted and exploded. The physical world is also judged to be permanent. The hills and heaths are eternal as measured against the brief span of life granted to human beings. These meanings have their factual foundation and seem to us inevitable and unavoidable. In a sense they are hypotheses but they are satisfactory so far as they enable us to account for the order of our experiences. We see the same things again and again because they are permanent and open to inspection. Why, indeed, should not these things we see and to which we react be as permanent as ourselves? There would seem to be a fundamental validity in these realistic meanings

which have grown up so naturally in human experience.

When the student is startled by the attack upon Natural Realism made by the philosopher, he should bear in mind the frank recognition which has been here given to the plain man's realism. If the philosopher teaches that Natural Realism is untenable, he will present what appear to him to be good and sufficient reasons.

The Recognition of Natural Realism in Philosophy.— Even philosophers who have been forced by their reflection to doubt the independent reality of the visible world have acknowledged that humanity is ordinarily realistic. Let us glance at the testimony of Berkeley and Hume, two thinkers whose arguments have done much to break down Natural Realism. "It is indeed an opinion strangely prevailing amongst men," writes Berkeley, "that houses, mountains, rivers, and in a word all sensible objects, have an existence natural or real, distinct from their being perceived by the understanding." *Principles of Human Knowledge*, Sec. 4. Similarly, Hume observes "That however philosophers may distinguish betwixt the objects and the perceptions of the senses; which they suppose coexistent and resembling; yet this is a distinction, which is not comprehended by the generality of mankind, who as they perceive only one being, can never assent to the opinion of a double existence and representation. *Those very sensations, which enter by the eye or ear, are with them the true objects, nor can they readily conceive that this pen or paper, which is immediately perceived, represents another which is different from, but resembling it.* In order, therefore, to accommodate myself to their notions, I shall at first suppose that there is only a single existence, which I shall call indifferently *object* or *perception*, according as

it shall seem best to suit my purpose, understanding by both of them what any common man means by a hat, or a shoe, or stone, or any other impression, conveyed to him by his senses." Hume, *Treatise of Human Nature*, p. 202. In short, Hume agrees that the generality of men regard their perceptions as physical objects and physical objects as their perceptions. Hence, he criticises a theory, to which we shall refer later, that our perceptions are only copies in the mind of physical things.

It would be easy to quote other philosophers as testifying to the universality of Natural Realism. Sir William Hamilton compiled more than thirty closely printed pages of references in evidence of "the Universality of the Philosophy of Common Sense, or its general recognition in Reality and in Name." There can be no doubt, also, that to-day there is a strong tendency to keep as near to common-sense realism as possible. I shall satisfy myself with just one more reference. "Naïve Consciousness always takes sensation to be perception of a complete, externally existing, real thing. It believes that the world lies around us illuminated by its own radiance, and that outside of us tones and odours cross and meet one another in the immeasurable space that plays in the colours belonging to things. Our senses sometimes close themselves against this continual abundance, and confine us to the course of our inner life; sometimes they open like doors to the arriving stimulus, to receive it as it is in all its grace or ugliness. No doubt disturbs the assurance of this belief, and even the illusions of the senses, insignificant in comparison with the preponderance of consentient experience, do not shake the assurance that we here everywhere look into an actual world that does not cease to be as it appears to us, even when our attention is not turned to it. The

brightness of the stars seen by the night watcher will, he hopes, continue to shine over him in slumber; tones and perfumes, unheard and unsmelt, will be fragrant and harmonious afterwards as before; nothing of the sensible world will perish save the accidental perception of it which consciousness formerly possessed." Lotze, *Microcosmos*, Book III, Chap. IV, par. 1. Surely we have done justice to the outlook of common sense.

Philosophy Must Start from Natural Realism.—Philosophy cannot have an arbitrary beginning any more than an arbitrary ending. Like science it must grow out of ordinary experience as a supplementation or correction of it. Science arises out of genuine problems which must be faced. This origin gives it its strength and reality. The power to recognize the existence of problems which must be met is the distinguishing characteristic of men like Galileo and Newton and Faraday. Now philosophy is likewise founded on specific problems which have slowly been discovered and formulated by men of insight. The general setting is ordinary experience. Were this not so, philosophy would be unreal and artificial. "Philosophy properly begins in a description of human experience. It must give close attention to the distinctions, meanings, and attitudes which are characteristic of man's natural view of the world in which he lives. Such a preliminary study prepares a foundation upon which the thinker may work. . . . The advance of philosophy, like that of science, must be gradual, and the starting-point must be the experience of everyday life." Sellars, *Critical Realism*, p. 1.

Natural Realism and Science.—We shall see that the conclusions and constructions of science conflict with the outlook of Natural Realism. But as long as possible this

conflict is ignored by the specialist in science. He lives and thinks within the outlines set by common sense. The physical world which physics and chemistry study is out there in space and essentially perceivable. It is true that color is now considered an effect produced in the sensitive organism by light waves which impinge upon the eye, and that sound is judged to be a sensation caused by sound-waves in the air. But knowledge is still thought of as dependent upon a perceptual observation of an independent world. The scientist often solves particular problems by making distinctions between the real process in nature and the perceptual experience of the observer—a distinction which runs directly counter to the outlook of common sense—without realizing that his assumption implies that the objects seen by him are not physical things but effects in his mind. The power of an habitual outlook with which he has not reflectively broken is so great that he can believe at the same time that the real world is colorless and soundless and that it is colored and sonorous, that it is composed of small particles in ceaseless motion and that it is just as it is seen. The reason for this lack of consistency is, of course, the fact that the solution of particular problems bulks larger for the specialist than the attainment of a harmonious view of reality as a whole. The fact of knowledge is more important than its nature and means of attainment.

While science begins with the outlook of common sense and seldom reflectively breaks with it, it is forced to substitute conception more and more for perception. Atoms and molecules and electrons and ether-waves can only be conceived for they have never yet been literally perceived. The scientist knows that knowledge about the world is not as easy a matter as the untrained man is

apt to suppose. He is aware how many hypotheses have been erected only to be given up, and he more than suspects that the physical world as presented in many textbooks is only a temporary construct which will be modified with the growth of knowledge. The old assurance of common sense has departed never to return. The problem of the nature and conditions of knowledge is ripe for formulation. But until it is formulated, consciously, the scientist hesitates to break with the outlook of common sense, the chief reason for his hesitation perhaps being his inability to replace it by another definite outlook. It is here that the philosopher sees his function. Do the facts which the scientist has gained force reflection to remodel Natural Realism in a radical fashion? Is the real table the one I see before my eyes, or the one I conceive in terms of physics and chemistry? And how is it that I am able to conceive things which I am not able to perceive?

Natural Realism not a System.—But we must not make the mistake of believing that the ordinary man's outlook is a systematic and harmonious one. We have just indicated that the point of view of the scientist fluctuates from a stress upon perception to a faith in the powers of conception. The situation is much the same with enlightened common sense. Natural Realism is a practical adjustment which organizes the facts of experience in a rough-and-ready fashion. When difficulties arise, new distinctions are made without any very serious attempt to see how they fit into the more usual ones. We have given a broad outline of the outlook and must now pass to the qualifications which are made.

Why is it that I see one side of a thing while you who are standing in another position see another side? Common sense replies "*because* you are standing in one position in

regard to it and I in another." Position has, then, something to do with what I see as well as do my sense-organs. Why is this? Common sense by itself has no answer to give except the empirical fact that what we see varies with certain changes which we call changes of position. But if perception is merely an event in which things are revealed, why cannot we see all the sides of a thing at once and even the interior of it? *The fact is that we don't;* and common sense naturally accepts the fact and finds out certain empirical relations such as that between position and aspect seen. But it is not until science discovers the laws of optics and proves that light-waves must be reflected into the eyes that this relation receives an explanation. Common sense has accepted the theory of science which stresses a causal relation between the physical thing and the eye while still adhering to its original outlook. It is the task of philosophy to determine whether the old and the new can be reconciled. The implications of the new fact must be worked out and compared with Natural Realism.

Again, common sense sometimes speaks of seeing the *side* of a thing as though the side seen were a geometrical part of the thing; at other times it speaks of seeing an *aspect* of the thing or the way a thing *appeared* from a particular angle. An aspect seems to be more intangible and somehow more a function of the position of the observer. It does not have the same objectivity as the term side. Yet common sense uses now one term and now the other. What it is certain of is that the physical thing itself is seen. Further than that it has not worked the situation out.

In order to be concrete, let us take the shape of a table. "We are all in the habit of judging as to the

'real' shapes of things, and we do this so unreflectingly that we come to think we actually see the real shapes. But, in fact, as we all have to learn if we try to draw, a given thing looks different in shape from every point of view. If our table is 'really' rectangular, it will look, from almost all points of view, as if it had two acute angles and two obtuse angles. If opposite sides are parallel, they will look as if they converged to a point away from the spectator; if they are of equal length, they will look as if the nearer side were longer. All these things are not commonly noticed in looking at a table, because experience has taught us to construct the 'real' shape from the apparent shape, and the 'real' shape is what interests us as practical men. But the 'real' shape is not what we see; it is something inferred from what we see. And what we see is constantly changing in shape as we move about the room; so that here again the senses seem not to give us the truth about the table itself, but only about the appearance of the table." Russell, *The Problems of Philosophy*, pp. 15–6.

In this example we meet with the distinction between the physical thing and its appearance to individuals under certain conditions. We see the physical thing? Yes; but we do not always see it the same. That is an empirical fact which common sense has had to recognize and somehow appear to explain. It does this by making a distinction between the physical thing and its appearances. But the word appearance does not, of course, explain anything. A moment's thought shows that there is need for reflection. Philosophy is just such reflection.

Difficulties Confronting Natural Realism.—Ever since its inception, philosophy has brooded over difficulties which seemed to be destructive to Natural Realism.

Just because the philosopher could not be satisfied with the lack of system characteristic of common sense, he felt the sharp edge of the problems indicated above and of others like them. Take the color of an object for example. It varies according to the nature of the illumination, the distance of the observer, the condition of the intervening medium. But if the color I see is actually the color of the physical thing I see, as I ordinarily take it to be, how can it vary in this way in relation to factors outside of the thing? The color I see would seem to be a *function* of conditions of which the physical thing is only one. And so it is held to be by science. It is true that I am apt to speak of the *real* color in contrast to the *apparent* color. But a little reflection convinces me that this is only a contrast between a more satisfactory experience and a less satisfactory one. The real color of this piece of cloth is that seen in the daytime and from near by; its apparent color is that which it has at a distance or under the gaslight. I make a choice between two colors and disavow one for good empirical reasons. But both colors, the real as well as the apparent, are functions of conditions. I can never observe a color which is not; and so it seems natural to conclude—though it does not strictly follow—that the physical thing by itself and in its own right has no color.

Another example which has always attracted attention is the case of the straight stick which appears bent in water. I *know* that it is straight because I can take it out again and look at it. Even while it is in the water I may test its shape by running my hand down over it. I am compelled to conclude that what I see is conditioned by processes external to the stick. Science has, as we all know, worked out the problem in some detail.

Reflecting on these and similar difficulties confronting

Natural Realism, men soon began to doubt the testimony of the senses, *i. e.*, began to wonder whether the thing seen was the physical thing at all. When there was no adequate construction following upon this doubt, the movement away from common-sense realism was called *scepticism*. Natural Realism broke down and philosophical systems took its place. How can these difficulties be met?

References

Berkeley, *Principles of Human Knowledge* and *Three Dialogues Between Hylas and Philonous*. These are quite basic for modern philosophy.

Fullerton, *An Introduction to Philosophy*, chap. 5. Suggestive but inconclusive.

Hume, *Treatise of Human Nature*, pt. IV.

Russell, *The Problems of Philosophy*, chap. 1.

Sellars, *Critical Realism*, chap. 1.

Weber, *History of Philosophy*, sec. 22.

CHAPTER III

THE BREAKDOWN OF NATURAL REALISM

A Systematic Attack upon Natural Realism.—Different groupings of the main objections to Natural Realism can and have been made. For our present purposes the following, although it does not claim to be exhaustive, will suffice: (1) the fact that what we perceive is a function of many processes both extra-organic and intra-organic; (2) the distinction between the physical thing and its appearances; (3) the lack of correspondent variation between things and that which is perceived; (4) the differences between the perceptions of individuals; (5) the difficulty experienced in explaining images, dream-life and memory on the basis of Natural Realism; (6) the synthetic or composite character of that which is perceived. Our aim will be to examine these objections and to weigh their cumulative force. It is obvious that they bid fair to force us beyond the main outlines of Natural Realism, *viz.*, that we perceive the physical thing itself.

An important question of method arises here for consideration. Because of these objections to Natural Realism, many writers have swung entirely away from realism to what is called idealism. We must, I think, set our faces sternly against any such hasty leap. Reflection arises within an experience already organized. To separate the problems and their assumed answers from the context in which they have arisen is surely unjustified. Our first endeavor should be to remodel and develop Natural

Realism in order to make it meet objections. I hope that the sequel will show that the realistic meanings of both common sense and science can be retained while a more adequate theory of knowledge can be substituted for the view that in perception we apprehend the physical world itself.

Perceived Objects are Functions.—What we perceive is a function of processes which may be divided into two classes, the extra-organic and the intra-organic. Thus it is an object which has conditions. But these conditions are not given, they must be discovered. I see this book which I hold in my hand. My experience is something which presents itself and investigation is required to enable me to know all that must take place before this apparently simple event can occur. Now even common sense is well aware of many of these conditions, although it has not realized their significance. We all know that organs of vision are necessary, that there must be a source of illumination, that opaque objects must not intervene. This knowledge is elementary and easily gained but science alone has developed its implications. If perception is merely an event in which things are revealed, why cannot I see the things on the other side of a brick wall? The fact is that I do not and so common sense says that I cannot. But, as was pointed out a while ago, the reason has been given only by the tested theory that something comes from the source of illumination, is reflected to the eye, and somehow there conditions what we see. The opaque object prevents the arrival of this something which we call light. Science has even measured the rate of transmission of such processes as light and sound. Only he who is willing to contest the empirical data of science has the right to doubt these conclusions.

What we see is, then, a function of what arrives at the eye; what we hear, of what arrives at the ear. But internal processes now intervene. In the case of sight, the retina and optic nerve in general must function; in the case of hearing, the auditory nerve must be stimulated in complex ways. Such processes must be extended to the cortical centres even before perception takes place. Admitted that we know comparatively little of what occurs in these centres, we still have reason to believe that it is complex and fundamental.

The *direction* of the mediatory processes of which what we perceive is a function is provedly from the physical object to the brain, while the direction of the attention seems to be from the concrete individual to the object. Immediate experience seems to inform us that we see the physical thing, while reflection urges upon us the position that what we see is a function of processes in the organism as controlled by extra-organic processes. Can these two positions be reconciled? An easy and natural way to reconcile them is to conclude that what we perceive is not actually the physical thing although it is inevitably so taken by common sense. What common sense sees is a product of whose conditions it is not informed and which is not labelled for it. Reflection suggests that we must reclassify it. *It must be borne in mind, however, that such reclassification does not change its texture or the way it is given one jot.*

The Physical Thing and its Appearance.—We have already touched upon this distinction and suggested its significance. It will be noted at once that it reënforces the argument offered above. When closely examined, this distinction is found to be a recognition of the fact that objects are perceived differently under different conditions.

"For example, we look from our window and see, as we say, a tree at a distance. What we are conscious of is a small bluish patch of color. Now, a small bluish patch of color is not, strictly speaking, a tree; but for us it represents the tree. Suppose that we walk toward the tree. Do we continue to see what we saw before? Of course, we say that we continue to see the same tree; but it is plain that what we immediately perceive, what is given in consciousness, does not remain the same as we move. Our blue patch of color grows larger and larger; it ceases to be blue and faint; at the last it has been replaced by an expanse of vivid green, and we see the tree just before us.

"During our whole walk we have been seeing the tree. This appears to mean that we have been having a whole series of visual experiences, no two of which were just alike, and each of which was taken as a representative of the tree. Which of these representatives is most like the tree? Is the tree *really* a faint blue, or is it *really* a vivid green? Or is it some intermediate color?" Fullerton, *An Introduction to Philosophy*, p. 60.

Now what holds for color in the above example holds also for shape and size. What is the real shape and the real size? Do we not have to pass a judgment of choice between the various ones presented? But so long as we are concerned with a selection among presented objects, such a choice is assuredly practical in its motivation. I get very near a small object and quite far away from a large one like the Capitol at Washington.

But once I have made my selection, a further difficulty ensues. What are these other rejected objects? To call them appearances does not explain anything. Are they physical things? But, if so, what space do they occupy, and how can we deal with them? Can I reside in apparent

houses, and are they built by masons? I shall leave it to the reader to exercise his ingenuity upon appearances. But, if they are non-physical, how am I able to pass from my perception of them to my perception of the actual physical thing without noticing any marked difference? Is it not obvious that what I call the perceived physical thing is merely the standard appearance, not differing in kind from the others? All of them are functions of extra-organic and intra-organic processes. And these functions are transient, not independent of the individual, and, therefore, not external. Let us speak of them henceforth as *percepts* or *thing-experiences*.

The Lack of Correspondent Variation.—The third objection to the main thesis of Natural Realism falls into the same group as the two which we have already examined. The principle under which this objection operates has been formulated as follows: "If anything X exhibits variations which are not shared by Y, X and Y must be distinct existences." Now what we see varies from moment to moment when we have every reason to believe that the physical thing itself does not. Common sense believes that the *real* table is square although I see it as possessing obtuse and acute angles. What I see, moreover, varies with every change in my position. Thus the color I see as well as the shape and the size of the percept varies, while I am firmly convinced that the physical thing remains essentially the same. Such is the situation so long as I accept the meanings of independence and permanence for the physical world. Reflection seems forced to conclude that percepts are non-physical.

Experience forces us to accept a still more basic variation. May not physical things have even ceased to exist while we are perceiving what we ordinarily identify with

them? Thus far we have stressed changes in position and the resultant modifications in what we perceive; let us now introduce the time element along with space. We are informed by astronomers, for example, that a star which we just now perceive may have been destroyed centuries ago; so long does it take light to travel to us through interstellar space. How, then, can we possibly identify what we see with the star itself? Again, the relations between our percepts are often not the same as the relations between the objective occurrences themselves. Thunder succeeds lightning for us, but we are certain that they arise at about the same time. Now these differences in temporal order can be easily accounted for by reference to physical processes of which what we see and hear are functions.

The Differences between the Perceptions of Individuals.—The next three arguments against Natural Realism also fall into one group. They stress the intra-organic factors, especially those which are admitted by common sense to be mental.

What is perceived by an individual is partly determined by his interests and his training. The artist will note shades of color which can hardly be distinguished by the untrained. The same is true for sounds and harmonies and for flavors and odors. It has been discovered that people do not observe the same events when they are apparently in a position to do so. At the least, there is selection; at the most, personal elements in what is perceived. The psychologist is convinced that what is seen is largely what we expect to see; and it is obvious that what we expect to see is a function of what we have experienced in the past. But the past introduces the personal history of the individual, which is always more or less unique.

But if what is perceived is different to any degree for different individuals, it is impossible to say that they see the *same* physical thing. It would, perhaps, be possible to assert that different persons saw *similar* things. Yet these similar things are believed to occupy the same part of space, a claim which conflicts with the belief of common sense that only one thing can occupy one portion of space at any one time. But my percept has no more right to be regarded as *the* physical thing than has yours.

Can Natural Realism Account for Memory?—Common sense is inclined to think that memory and ideas in general are personal and mental. Yet, if perception be merely an event in which physical things reveal themselves, how can things leave traces behind them? We would have to regard it as an event in which the physical thing acted upon some more or less permanent part of the individual. The physical thing would have to leave its impress behind. But perception would then involve a double action, the reaching out of the individual to the thing and the extension of the thing to the mind. It is difficult to see how the impress in the mind could be an exact copy of the physical thing. And yet Natural Realism would be forced to some such assertion. Certainly our images are like our percepts; *but this may be because both are mental.*

It is interesting in this connection to note how soon the outlook of Natural Realism was replaced in ancient philosophy by the theory that perceptions are impressions produced upon the mind by the causal action of the physical world. The sensible impression is, according to Cleanthes, the Stoic, like an impression made upon a material object, like the mark of a seal upon wax. Memories are reproductions of these original impressions. Of course, all this is crude, for these thinkers had no adequate idea of the

mechanism of perception. But the drift of the thinking is clear.

To meet the problem raised by the existence of images, concepts and memories, the advocate of Natural Realism must theorize. It is evident that there is some sort of a genetic relation between what is perceived and what is remembered and conceived. But if what is perceived is physical, how comes it that we have this power of voluntarily recalling an experience like it? Either memory is another kind of perception and what is remembered is physical, or an effect is left in the individual which is the source of memory. But such a change in the individual must be dated with the perception. It is obvious that perception is not the passive event that unenlightened common sense supposes it to be. Reflecting upon these facts and implications, enlightened common sense has swung more and more to the conclusion that perceptions are mental and are of the nature of conditioned changes in the individual. It is true that the plain man gets along very nicely with the assumption that he can somehow pass back and forth between physical things and ideas, between the world out there, as it is called, and ideas referred more or less vaguely to the body. But as soon as he reflects, he begins to speak of sensations as mental elements produced in his mind by the stimulation of his senses. The philosopher realizes that common sense tries to hold more or less contradictory positions at the same time.

We are now more than ever convinced that common sense has no systematic view of things and that many problems lurk in the background of Natural Realism which are not often noted because practical interests do not require it. The outlook of everyday life is vague and self-contradictory, and doubts are beginning to arise whether

it can be rendered consistent by the exercise of any amount of ingenuity. We have not, indeed, seen reason to question the existence of a physical world, but we have seen good reason to doubt that what we perceive is the physical world.

What Is Perceived Involves Construction.—The philosopher works coöperatively with science. He must accept his facts in large measure from special investigators who are masters of technique and of relevant methods of verification. Hence the philosopher has the right to appeal to the conclusions drawn by psychologists in regard to perception. There is such general agreement upon the constructive character of perception and the facts are so well founded that this conclusion can be used with assurance. The child does not see what the adult sees. Past experience, training and knowledge play into and condition what is perceived. "The results of all of the various experiences coöperate in giving the object that is seen the appearance it has. To put it the other way, the object that is seen is the one that serves to explain the earlier experiences; it is the one that harmonizes all of the uses and observations of it in the past. By constant trial and use, a construction develops that proves true when tested in any way. This is accepted as the real object as opposed to mere sensations. Whenever the sensation presents itself, this developed object arises in consciousness." Pillsbury, *Essentials of Psychology*, p. 159. It would certainly seem to follow that each individual perceives an object which is largely a function of his past experience. But who, then, perceives a truly independent physical thing?

We need not labor this point. All the objections to Natural Realism which we have examined converge cumu-

latively upon the theory that what is perceived is a function of many factors, some external to the organism and some internal. And it is just because these factors are not announced in the perception that it is so naturally taken to be an independent and permanent reality simply revealed to the percipient. Natural Realism needs no excuse; it is an outlook which could not help developing. Yet analysis and reflection break down its plausibility. It should be noted, however, that we are limiting Natural Realism to the view of perception held by common sense. We have not challenged the realistic meanings which accompany it but only their special application to what is perceived.

The Physiological Theory of Perception.—We are now in a position to examine the account of perception accepted by psychology and physiology and to see its lack of harmony with the characteristic thesis of Natural Realism. According to the dominant theory, the sense-organs must be stimulated before perception arises. The excitation is transmitted to the cortex, and only then does there appear what is called by psychologists a percept and by common sense the physical thing. Thus the percept is connected with the end-term of a complex process. How, then, can it be identified with the physical thing which is part of the beginning of this process? It would seem that the plain man has been identifying the effect with the cause. Most naturally, of course, because only the percept is given in the field of experience. But must we not separate these two things which have been identified? Must we not distinguish between the physical thing, which helps to stimulate the body, and the percept which we perceive as a result? I think that it is obvious that this distinction must be made. Thus, the physiological theory of percep-

tion fits in with the objections to Natural Realism which we have already considered.

Conclusion and Warning.—This brief examination of the inadequacies and difficulties which confront Natural Realism raises many important questions. It is surely evident by now that philosophy cannot be escaped, *i. e.*, that there are grounds for serious and prolonged reflection. He who has gone thus far can hardly turn back. I do not think that it is an exaggeration to say that Natural Realism has broken down. Perception cannot be an event in which physical things, themselves, are present to the individual perceiver. That which is present in the field of experience is a function of many conditions and must be considered non-physical. There is good reason to consider it mental even, but we must not be too hasty in our classification. Besides, the term mental needs definition.

Another point must be noted. Because the theory of perception characteristic of Natural Realism breaks down, must we give up those realistic meanings and distinctions which we found in experience? When we come to look at the movement of reflection, we soon note that the physical thing, while no longer present to perception, is assumed to be one of the *conditions* of that which is perceived. But that which conditions must be as real as that which is conditioned. We assume the existence of the physical thing which is independent and permanent. But if it is not perceived, how is it known? The question which we must seriously ask ourselves is this: Can a theory of knowledge be achieved which will do justice to these realistic distinctions and meanings and will accept the existence of a physical world and yet not be open to the objections which have proved fatal to Natural Realism?

The history of philosophy presents us with the efforts of the human mind to break loose from Natural Realism and still retain a belief in a physical world not too different from that which common sense supposes itself to be perceiving. The first hesitating step beyond common sense is usually called representative, or Lockian, realism. We shall now betake ourselves to a study of this development.

References

The references are essentially the same as for the first chapter. To these may be added the treatment of perception to be found in any good psychology. The following are suggested:

Angell, *Psychology*, chap. 6.

James, *Principles of Psychology*, bk. 2, chap. 19.

Pillsbury, *Essentials of Psychology*, chap. 7.

Stout, *Manual of Psychology*, bk. 4, chap. 6.

A glance at causal theories of perception in ancient philosophy will also be suggestive. Let the student look up the teaching of Protagoras in Gomperz's *Greek Thinkers* or Weber's *History of Philosophy*.

CHAPTER IV

REPRESENTATIVE REALISM

The Value of an Historical Approach.—The human mind has always taken one step at a time. When a new reflective position is achieved, it is worked over carefully and practically all of its possibilities exhausted before another step is taken. Hence the individual thinker who has seriously adventured himself on the path of philosophy can usually find at least the preliminary steps which his mind is inclined to take already examined by past thinkers. What extremely able men have so carefully done cannot help but be of assistance to those who come after. It is for this reason that philosophy cannot be successfully separated from the history of philosophy.

The three British thinkers, Locke, Berkeley and Hume, raised the essential problems of philosophy so clearly and stated their own conclusions so simply and unambiguously that no better introduction to philosophical problems can be found than their writings. Benefiting by their analyses and reflections, the student is prepared to state philosophical questions from different angles and with a fairly precise idea of what mistakes to avoid and what distinctions to make. These thinkers of the seventeenth and eighteenth centuries supplement one another to a remarkable degree, and there is a marked deepening of reflection as we pass from Locke through Berkeley to Hume. The student is led to comprehend different points of view and is thus induced, and even obliged, to think for himself.

Representative Realism Follows Natural Realism.—Many of the difficulties which we have raised as very serious objections to Natural Realism were noted by the Greeks. Many thinkers passed to relativism as a result and concluded that man cannot have a genuinely objective knowledge of things because he only knows how they affect him. Sensations, they taught, are effects in us rather than apprehensions of the inherent characteristics of things. This outlook goes back at least as far as Protagoras (circa 411, B. C.) and was further developed by Pyrrho, Arcesilaus and Carneades. Man is the measure of all things. Protagoras had little faith in reason as a means to a more adequate knowledge, and science had not developed far enough to suggest ways of accounting for those illusions which impressed these early thinkers and determined their skepticism of perception.

But modern philosophy arose in touch with a vigorously developing science. As a result, skepticism did not easily gain sway. That man obtains knowledge of the world few doubted. The real question was the nature and source of this knowledge which he actually possesses. Another interesting fact is that Natural Realism was rejected from the first. In its place was put representative realism. Knowledge is now thought of as a function of human ideas instead of as a direct apprehension of the physical world. Ideas are supposed to intervene between the knower and that which is known and to serve as cognitively satisfactory substitutes for the independent, extra-mental world which is still believed in. To know the corporeal world is not to apprehend it directly but to apprehend ideas which are somehow like it and so reveal it. Thus knowledge is an indirect apprehension or an apprehension through the medium of ideas. The apprehension of ideas

is the best we can do, and it is almost the same as the apprehension of the corporeal world itself because ideas are similar to physical things. This reflective step away from Natural Realism is usually called representative realism. Sometimes it is called the copy theory of knowledge. It early took two forms, the rationalistic and the empirical. The rationalistic form arose on the continent and is associated with the name of René Descartes, while the empirical form arose in England and is connected with the writings of John Locke.

Rationalistic Representative Realism.—Descartes was a rationalist, that is, he believed that the human mind is able to produce concepts somewhat independently of sense-perception. He accepted the concept of the physical world achieved by the science of his day, but he realized that this was not the world which we perceive. It is the world as we conceive it after due reflection.

Some historians of philosophy have held that the Copernican theory of the solar system, so opposed to what we perceive, encouraged this excessive rationalism. Probably it had its part. But the fundamental cause was the rise of mathematics and the inability of the logicians of the day to connect mathematics genetically with perception. Perception and conception tended to fall apart into two mental spheres having little commerce with one another. Thus rationalism has always displayed an excessive disdain for perception and has encouraged a deductive method of investigation.

The following account of the Cartesian theory of knowledge illustrates rationalistic representative realism very well. "We find in the mind, to use Descartes' own illustration (*Meditations*, Veitch's trans., p. 120), two wholly diverse ideas of the sun: the one idea, the sense-

image, by which the sun appears extremely small, seems to come to us directly from the sun through the senses; the other idea, whereby it is represented as many times larger than the whole earth, we have constructed for ourselves in physical science. These two ideas cannot both resemble the same sun, and reason teaches us that the one which is given us in sense, and which seems to have immediately emanated from the sun, is the most unlike. The true nature of the sun, as it exists without us, is thus revealed not by sense but by thought. Our sense-images are but pictures in our minds, and do not represent, but misrepresent, the true nature of the real. There are two external worlds, the one rich with its bright variety of diverse qualities, appearing to the 'senses,' the other, poverty-stricken, constituted only of matter and motion, and discovered by the understanding." Norman Smith, *Studies in the Cartesian Philosophy*, pp. 16–17.

This dualism between perception and conception characteristic of rationalism must be held in mind. It has done more harm to philosophy than any one other false assumption. Conceptions are, for Descartes, mental objects which the mind contemplates, but they are not derived from perceptions. They are, instead, wholly distinct from them in nature. "By this strange opposition of conceptions to perceptions, which he makes to be absolute, Descartes aggravates the difficulties, already great enough in all truth, of his dualism, and lands himself, founder though he be of the physical sciences, in a rationalism more extreme in its antagonism to sense-experience than even the idealism of Plato. The causes leading Descartes to this position are to be found in his absorbing interest in the mathematical sciences, whose method he misconceived." *Ibid.*, pp. 17–18. We shall have occasion

to refer to the consequences of this vicious dualism in connection with several problems.

Cartesian Metaphysics.—What view of the world was affirmed by Cartesian rationalism? Since much of our energy in the latter part of the book will be expended in showing that the Cartesian view of nature has been outgrown by modern science, it will be best to make his outlook very clear. We shall call his position *mathematical rationalism* or rationalistic representative realism. Such an expression sounds pedantic but is really descriptive. The real physical world is quite different from the world given in perception. It is only extended, not colored and heavy and sonorous. "The nature of body consists not in weight, hardness, color, and the like, but in extension alone . . . in its being a substance extended in length, breadth, and height." The real world is the world as conceived by the mathematician.

Descartes is spoken of as a dualist. He taught that there are two substances or independent realities, mind and matter, and that these have nothing in common. Matter is extended substance and mind is thinking substance. He is no skeptic and is quite convinced that he can penetrate to the very defining essence of these substances and so know that they are fundamentally and inherently different. But how does he know all this? This brings us to his method which is an essential part of his theory of knowledge.

Descartes' Method.—Descartes invented the method of systematic doubt. He would doubt everything he could. This method has exercised a malign influence upon philosophy. "It looks sometimes as though the main purpose of philosophy were to doubt whenever doubt is at all possible, as though its main purpose were not to explain,

but to explain away." *The real basis of his position is his mathematical rationalism*, but he writes as though he had found a fixed starting-point in a mere thinking self—*cogito ergo sum*—whence he passes to God and thence to the world. Modern logic maintains that doubts must be specific and definitely motivated. Descartes' universal doubt is of no value. The method we are adopting in this book and which we believe is justified is a gradual critical advance from Natural Realism under the motive-force of reflective problems. A general doubt is only too apt to lead to a new dogmatism because it can be met only by an arbitrary standard of truth. Let us listen to his own words: "But after I have recognized the existence of a God, and because I have at the same time recognized the fact that all things depend upon him, and that he is no deceiver, and in consequence of that I have judged that all I conceive clearly and distinctly cannot fail to be true . . . no opposing reason can be brought against me which should make me ever call it in question; and thus I have a true and certain knowledge of it." Such a criterion of truth is altogether too formal and personal.

Representative Realism Raises New Problems.—Representative realism brings with it problems which do not exist for Natural Realism. The idea is immaterial; the physical reality is material. But we know the ideas directly because they are objects which we contemplate, while we can know the physical world only indirectly and through these ideas. Ideas are cognitive representatives of the material realities. They are mental substitutes for, or signs of, the physical world which is no longer regarded as perceptible. This situation is characteristic of representative realism.

The more empirical form of representative realism was

developed by John Locke (1632–1704). His frank handling of the problem made it clear that, while the position as a whole might be a necessary advance upon Natural Realism, it needed further working out. Are these ideas copies of physical things? Or are they mere signs not resembling them? What is the exact nature of scientific knowledge? These questions were soon raised and led to heated discussions. Unfortunately, the assumption that knowledge is a *likeness* between physical things and mental objects called ideas dominated thought for a long time. Working within this current assumption, Berkeley startled philosophers by questioning the existence of the physical world. How can we be sure that there are physical things if we cannot perceive them? The consideration of this problem in the light of the first two questions led Berkeley to conclude that the simplest way out of the difficulty is to deny the existence of the physical world.

Locke's Position.—Locke's purpose was "to inquire into the origin, certainty, and extent of human knowledge." He decided that all ideas come from sensation or reflection. In other words, he believed that he could classify ideas into two great classes according to their conditions. Those ideas which we connect with the operation of the sense-organs he calls ideas of sensation, while all other ideas are assigned to more internal sources. In opposition to Descartes and the continental rationalists in general, he believed that all objects of attention have an empirical origin. We need not take up such questions as his use of the term *experience* and his conception of the *mind*. He is unclear and self-contradictory at times, and often confuses questions of origin with questions of function and validity. But, in spite of these shortcomings, it is easy to make out the drift of his thinking.

"Ideas" are for Locke the objects of the understanding when a man thinks. To-day we would be less likely to use such a general term and be content to speak of percepts, and concepts. But as soon as we realize Locke's standpoint no misunderstanding need arise from his use of the term idea. *Whatever is present in the field of the individual's experience and can be the object of attention is an idea.* Locke seeks to analyze such objects and to discover the more primitive mental elements from which they are formed. It is evident, then, that Locke believes that all objects of which we can be aware are mental and that such knowledge of the physical world as we possess must be somehow in terms of these objects.

But Locke nodded at times. He did not realize the complexity of the problem he had fearlessly raised. He is absolutely certain of the existence of the physical world distinct from the ideas to which the mind is existentially confined. He even drops back into Natural Realism at times; and even when he does not commit this self-contradiction, he mistakes his *certainty* of the existence of the physical world for a proof. The student who is first breaking away from Natural Realism should have a deal of sympathy with Locke and a sort of fellow-feeling. Dogmatic common sense rings in his protest: "I think nobody can, in earnest, be so skeptical as to be uncertain of the existence of those things which he sees and feels." In the following passage, Locke indicates why he is so certain that the physical world exists and his reasons certainly appeal to all of us: "Thus I see, whilst I write this, I can change the appearance of the paper, and by designing the letters tell beforehand what new idea it shall exhibit the very next moment, by barely drawing my pen over it, which will neither appear (let me fancy as much as I will), if

my hand stands still, or though I move my pen, if my eyes be shut; nor, when those characters are once made on the paper, can I choose afterward but see them as they are; that is, have the ideas of such letters as I have made. Whence it is manifest, that they are not barely the sport and play of my own imagination, when I find that the characters that were made at the pleasure of my thought do not obey them; nor yet cease to be, whenever I shall fancy it; but continue to affect the senses constantly and regularly, according to the figures I made them." Locke, *Essay*, Bk. IV, Chap. XI, Sec. 7.

But the problem for the thinker is to work out a system which will justify and explain his beliefs. Let us see whether Locke did this successfully.

Locke's View of Knowledge.—Locke's view of knowledge has been called *representative perception.* We shall limit ourselves to his conception of the physical world and show what knowledge of the physical world means for him. It is best to distinguish between the *assurance that* there is a physical world and the conception of it that is entertained. He admits that our assurance that there are things existing without us cannot reach demonstration; "yet it is an assurance that deserves the name of knowledge." It is a confidence or faith that has a good basis in experience. His chief reliance for this confidence seems to be the distinction between perception and imagination.

When we pass to an examination of his conception of the physical world, we note that he accepts the outlook of the science of his day. He distinguishes between the *primary* and the *secondary* qualities of things and holds that only those ideas of ours which are designated primary are copies of the actual qualities of physical things. "I say, then, that to have ideas of substances which, *by being conform-*

able to things, may afford us *real* knowledge, it is not enough, as in modes, to put together such ideas as have no inconsistence, though they did never before so exist. . . . But our ideas of substances, *being supposed copies, and referred to archetypes without us*, must still be taken from something that does or has existed; they must not consist of ideas put together at the pleasure of our thoughts without any real pattern they were taken from, though we can perceive no inconsistence in such a combination." *Essay*, Bk. IV, Chap. IV, Sec. 12. In other words, the properties which we assign to a particular physical substance must have been found to co-exist. Such co-existence is a matter of experience. Thus the chemist works out the properties of the various substances in this experiential fashion. Gold has certain properties and phosphorus still others. "And our ideas, being thus true, *though not perhaps very exact copies*, are yet the subjects of real (so far as we have any) knowledge of them: which, as has been already showed, will not be found to reach very far; but so far as it does, it will still be real knowledge."

Let us examine these important statements. Locke, first of all, distinguishes between the primary and secondary qualities of things. He removes color, sound, taste and smell from his conception—or shall we say picture?—of the physical world. He conceives the world in terms of solidity, extension, figure, motion, rest and number. In other words, he pictured the world as the physicists, his friends, would. Were he living to-day, he would try to understand the view of the physical world held by modern science and would accept that. Note farther that he admits that our ideas are perhaps not very exact copies. He can think of no other meaning for this *cognitive signifi-*

cance of our ideas than copying; but he realizes that he has no right to be dogmatic about the degree of similarity. Why? *Because we cannot get to the physical things themselves to compare them with our ideas.* It is obvious that this difficulty exists;for, if all the objects of which we are aware are ideas and physical things are existentially distinct from them, no comparison can be instituted by the human mind.

Doubts Confronting Representative Perception.—On the whole, Locke stated his position mildly. It was not long, however, before objections of a fundamental nature were raised. The chief objection philosophers have felt can be put in the form of a question. "How do we *know* that, corresponding to our ideas, there are material things, if we have never perceived, in any single instance, a material thing? And the doubt here suggested may be reinforced by the reflection that the very expression 'a material thing' ought to be meaningless to a man who, having never had experience of one, is compelled to *represent* it by the aid of something so different from it as ideas are supposed to be. Can material things really be to such a creature anything more than some complex of ideas?" Fullerton, *An Introduction to Philosophy*, p. 166.

Those who have felt the force of this doubt and yet have not wished to relinquish realism of the Lockian type have sought to escape by making sensations merely *signs* and not copies of physical things. Thus in the famous *Physiological Optics* Helmholtz wrote as follows: "In so far as the quality of our sensation indicates to us the peculiarity of the external influence through which it is aroused, *it can stand as an indication but not as a copy* of it. . . . An indication need be in no way similar to that which it indicates. The relation between the two reduces itself to

this, that a similar object, coming into action under similar circumstances, calls up a similar indication. We call our ideas of the external world *true*, when they give us sufficient information about the consequences of our actions throughout the external world, and bring us to proper conclusions regarding its expected changes." For such an outlook, we should speak only of an external or extramental world and should regard such a world as only the most plausible hypothesis to account for the temporal and spatial order of our perceptions. This sign-theory, which has been adopted by several modern scientists, is of special significance for the beginner who has arrived at this point; for it makes him realize as nothing else will that the very expression 'a material thing' may be meaningless. If we are confined to ideas which are signs merely, we can have no well-grounded idea of the content and matter of *material* things; if we retain the term, we must be on our guard against carrying over the concrete objects of common-sense realism. What the physical is in itself becomes a problem which, by hypothesis, can never be solved. One must immerse himself in the consequences of this sharp break with Natural Realism before he is prepared to take philosophy seriously.

It is not a far step from representative perception to idealism. Locke had decided that all the objects of the understanding are ideas, though he cherished the faith that these mental objects are copies of, and therefore cognitive substitutes for, physical realities. Berkeley doubted that ideas could be accepted as representatives of that which is non-mental. If all that we can experience is mental, why assume the existence of something which we can define only in negative terms? To say that the physical world is non-mental surely does not give us much

information about the content of it. Moreover, we need not grieve over the loss of something whose nature we cannot form an idea of. We can suffer no loss by losing what we have never had. But we are now ready to grapple with idealism.

References

Alexander, *Locke.*
Descartes, *Meditations.*
Fullerton, *Introduction to Philosophy*, chap. 12.
Locke, *Essay Concerning Human Understanding*, bk. 4.
Russell, *The Problems of Philosophy*, chap. 2.
Santayana, *Reason in Common Sense*, chap. 4.
Smith, *Studies in the Cartesian Philosophy*, chap. 1.

CHAPTER V

THE RISE OF IDEALISM

What Is Idealism?—The term idealism has different shades of meaning. What we shall try to do here is to take the simplest meaning and connect it with the teaching of Berkeley. Berkeley's idealism is directed against Lockian realism and can best be understood in this setting. He agrees with Locke that we can apprehend only our ideas, but goes farther and maintains that we have no good reason to believe that there is a physical world corresponding to them. Thus his idealism is a denial of the existence of a physical world and, on the positive side, may be described as *mentalism*. Spiritualism is another term which is sometimes used to describe his position. Nothing exists but spirits and the objects of their perception, which are inseparable from them and have no independent existence.

Berkeley's Position.—On the whole, Berkeley developed his arguments against Natural Realism so keenly and systematically that later writers have done little more than add to them here and there and re-state them. In doing this he was, however, only following in the footsteps of Descartes, Hobbes and Locke. But these thinkers still believed in the existence of an independent physical world and held that we can possess knowledge about it. Berkeley was more radical and went on to doubt the existence of this physical world which cannot be perceived.

There are, then, two stages in Berkeley's argument.

The first stage consists in the proof that the things we perceive by sense are really complexes of sensations or elementary ideas. In the *Principles of Human Knowledge* he adopts the terminology made familiar by Descartes and Locke and speaks of these objects as ideas. In the *Three Dialogues between Hylas and Philonous*, he calls these immediate objects of perception sensible things. His thesis is that sensible things cannot exist by themselves as we suppose physical things do and that they cannot therefore be physical things. The student should read the First Dialogue, at least, and ponder over it.

The second stage consists in an attack upon representative perception. He attempts to show that the copy-theory of knowledge is absurd and even self-contradictory. Since this is the really new element in his philosophy, we must examine it in some detail.

After he has disproved Locke's position to his own satisfaction, he goes on to construct a spiritualistic philosophy based on the contention that the only active reality of which we can conceive is mind or spirit. It is obvious, however, that this construction presupposes his destruction of physical realism. I presume that most of us would contend that a physical realism has the preference and must be put thoroughly out of the running before spiritualism has any chance.

The First Stage.—When we brush away certain technicalities inherited from traditional philosophy, Berkeley's arguments against Natural Realism are of two kinds. He attempts to prove that what we perceive is a function of the senses and is not substantial enough to exist by itself. He seems even to assert that we can apprehend a relation between the self and that which is perceived which makes it clear that sensible things are adjectives of the self. In

the second place, he seeks to prove that what we perceive is bound up with elements like pleasure and pain which are avowedly mental. Many of his terms are insufficiently defined and we are left in doubt as to what the senses are and what the nature of 'being perceived' is. The self, spirit, mind, or soul to which he appeals so confidently is more of a theory than an element within experience. But the drift of his argument is clear and, it seems to me, convincing. The sensible world does not have the independence and permanence which common sense assigns it.

But it is evident that his conclusion thus far is essentially the same as that which we have already reached. Are we necessarily forced into idealism? Or is there some way out? Let us study the setting of Berkeley's philosophy more closely to see why he was convinced that the breakdown of Natural Realism involved idealism. Other thinkers had gone thus far and had still retained physical realism. To answer this question we must pass to a study of the second stage of his argument.

Berkeley Attacks Locke's Philosophy.—Philosophies are intimately bound up with one another. It is often impossible to understand just why some thinker drew the conclusions he did until we know the system which he is attacking. We realize, then, that he assumes that a refutation of his opponent's theory involves the truth of his own—a big assumption but one only too often made. The truth is, that Berkeley attacks Locke's construction of a physical realism less naïve than that of common sense and argues from a victory over it to the necessity of his own idealism. Locke tried to develop a realism which would meet the demands of the science of his day, but, of course, we have the right to doubt whether Locke's interpretation is the only valid one. Of that more later. The

point to bear in mind, at present, is that Berkeley attacks first Natural Realism and then Lockian realism.

Berkeley's Animus.—It is often of importance to understand the controlling outlook which lies back of a thinker's reasoning and determines what he desires to prove or disprove. Philosophy is such a complex affair and affects questions which are so personal and usually so emotionally held that very few thinkers can escape a distorting bias. A preference, at least, is at work. It is not surprising, then, that some have allowed their prejudices to dictate a thesis to be proved. It can be said in their defense, however, that this dictation is largely unconscious and that the problems are often so subtle that the historian can explain unfortunate omissions and over-hasty conclusions without appeal to conscious deception.

Now Berkeley makes it plain that he desires to refute and confound atheist and materialist. We shall expect, therefore, that he will not spend so much time on an attempt to think out a new and more adequate form of realism as on the discovery of contradictions in the accepted forms. And this is actually the situation. While Locke was the admirer of physical science and a convinced believer in the physical world, Berkeley was a theologian who suspected science of being the friend of skepticism and materialism and their chief support. Locke wished to construct a system which retained the physical world and conceived it in the language of physics. Berkeley, on the other hand, was desirous of disproving the possibility of such a world. Hence, it was Locke's construction that Berkeley naturally attacked.

Berkeley's Disproof of Representative Realism.—We have seen that Berkeley and Locke have much in common. Both accept the position that the objects of the under-

standing are ideas. They part company, however, on the question of the significance of these ideas. The prime basis of Berkeley's criticism of Locke's construction lies in his denial that ideas can be like anything without the mind. "But, say you, though the ideas themselves do not exist without the mind, yet there may be things like them, whereof they are copies or resemblances, which things exist without the mind in an unthinking substance. I answer, *an idea can be like nothing but another idea;* a color or figure can be like nothing but another color or figure. If we look but never so little into our thoughts, we shall find it impossible for us to conceive a likeness except only between our ideas." *Principles of Human Knowledge*, Sec. 8. In other words, Berkeley asserts that the principle at the foundation of representative realism is self-contradictory. It is impossible for the mental to be like the non-mental. Does not likeness imply comparison? And can comparison operate beyond experience?

Another argument of his is extremely interesting and meets us again in Hume (1711-1776). "All our ideas, sensations, notions, or the things which we perceive, by whatsoever names they may be distinguished, *are visibly inactive*—there is nothing of power or agency included in them. So that one idea or object of thought cannot produce or make any alteration in another. To be satisfied of the truth of this, there is nothing else requisite but a bare observation of our ideas. For, since they and every part of them exist only in the mind, it follows that there is nothing in them but what is perceived: but whoever shall attend to his ideas, whether of sense or reflection, will not perceive in them any power or activity; there is, therefore, no such thing contained in them." Sec. 25. The significance of this argument grows upon one the more one

reflects. Do we divine any activity in our percepts and concepts? Can we intuit in what we perceive any source of activity which would account for those changes we witness? But if we actually perceived the physical world itself, it would be strange that the inner springs of action, the toil and moil of growth and creation, were not visible. Even magnification does not reveal the activity of change in what we perceive; all it does is to enlarge the objects seen and to render smaller ones perceivable. And, as Berkeley points out, motion is not activity but only a change in position. The conclusion he draws must be admitted. "A little attention will discover to us that the very being of an idea implies passiveness and inertness in it, insomuch that it is impossible for an idea to do anything, or, strictly speaking, to be the cause of anything: neither can it be the resemblance or pattern of any active being, as is evident from sect. 8. Whence it plainly follows that extension, figure and motion cannot be the cause of our sensations. To say, therefore, that these are the effects of powers resulting from the configuration, number, motion, and size of corpuscles, must certainly be false."

These are the two main arguments which Berkeley uses against representative perception. The mental cannot be like the non-mental, and the activity which we must conceive of as at the heart of reality is not present in what we perceive.

Berkeley's Construction.—Having convinced himself that representative perception of the Lockian type was untenable, Berkeley proceeds to an idealistic construction. He assumes that we can have no conception of the physical world which assigns activity to it. Matter must be inert and passive. But if so, it must be incapable of producing ideas in our minds. What is passive cannot, he

asserts, be the cause of anything. But ideas must have a cause since they are not under our control; they are functions of something outside of the individual mind. Now the only experience of activity which we have is that of our own minds. Volition is, for Berkeley, an experience of genuine activity. But it is obvious that we do not produce these ideas in our minds though we can reproduce them in the form of images. Hence, the only thinkable cause of ideas must be something analogous to the finite mind, however different from it in power and vastness of comprehension. Ideas, therefore, must be conceived as the signs of the controlling activities of a supreme mind. Put at its best and simplest and eliminating additional doctrines which are scarcely as defensible, this is Berkeley's construction.

It is quite possible to give up representative perception, as Berkeley does, and still hesitate to speculate so boldly about the nature of that which controls in us these orderly percepts of ours. In the preceding chapter, we pointed out how such men as Herz and Helmholtz adopted a sign-theory founded on the recognition of arguments essentially like those of Berkeley. Such a more modest and negative position is the reflex of a hesitation to admit that the physical world must be conceived of as inert and of a doubt whether the analogy from the human mind to a supreme, creative mind is a valid one. Historically, these doubts were first and best expressed by David Hume to whose development of English empiricism we shall next turn. Just as Locke raised questions which he did not satisfactorily answer but which led forward to deeper analyses, so Berkeley forced the human mind to delve more deeply into theory of knowledge. After we have thoroughly digested Berkeley's arguments against both Natural Realism

and Representative Realism, we are apt to be baffled in our quest after a reasonable theory of the physical world. What seemed so evidently given to our senses is still there but has lost its stability and permanence. We become convinced that the sensible world does not exist apart from perception. Yet we demand that there be something permanent and stable to control what we perceive and to determine the order of our perceptions. What is this controlling reality? If we still call it the physical world, what justification have we for this use, and how shall we conceive it? Berkeley's searching critique of Lockian realism threatened the destruction of all forms of physical realism.

Idealism does not Change our Experience.—The beginner is only too prone to mis-interpret idealism. It cannot too often be stated that idealism does not change any feature of the individual's experience. It is for this reason that Berkeley claimed, so earnestly, that his outlook was really nearer to that of common sense than was that of Locke with its separation of the primary from the secondary qualities. The sensible world, says Berkeley, is the only physical world and it is as you perceive it. Only it does not exist when it is not perceived. He attacks the independence of the physical world of common sense and not its empirical traits. It is the truth of those realistic meanings of independence, commonness and permanence which he denies. To give them a home, Locke had constructed a world which could not be directly perceived. Berkeley's solution was different. Having successfully disproved Locke's construction, he appealed to a spiritual realism. "You may indeed, nay, you must, live and think *as if* everything remained independently real. That is part of your education for heaven, which God in his goodness provides for you in this life. He will send into

your soul at every moment the impressions needed to verify your necessary hypotheses and support your humble and prudent expectations. Only you must not attribute that constancy to the things themselves which is due to steadfastness in the designs of Providence. *Think and act* as if a material world existed, but do not for a moment *believe* it to exist." Santayana, *Reason in Common Sense*, p. 115.

Gaps in Berkeley's System.—A closer examination soon reveals gaps in Berkeley's system. In the first place, he passes too quietly over the question of a common world. We have seen that his arguments lead logically to the conclusion that the sensible world, which I ordinarily take to be an independent, physical world, is really only *my* idea. It is a complex of *my* sensations perceived by myself. It would seem to follow that we do not perceive the *same* world but only corresponding and, supposedly, fairly similar worlds. But Berkeley did not wish to break too harshly with common sense; so he slurs over this problem. But one of his main arguments for the existence of a God depends upon the existence of a sensible world which exists whether I perceive it or not, but which must exist in relation to some mind. The only mind which is adequate to perform this function of guaranteeing a permanent sensible world is a supreme mind. Hence God exists. But we must remember that this sensible world cannot be the sensible world which we individually perceive, since that is unique. Thus he really only asserts another mind of a higher calibre, quite arbitrarily, when he believes that he proves the existence of a God in this fashion.

Another weakness, as we shall see in the next chapter, is his quite inadequate psychology of the self and of voli-

tion. He assumes that we can apprehend the self in the creative rôle of producing images. He does not distinguish clearly between his inherited concept of the self as a soul or spirit and the empirical self which he actually experiences. Before philosophy could go much farther, a deeper analysis of 'mind' was necessary.

References

Berkeley, *Three Dialogues* and *Principles of Human Knowledge*, *passim*.
Fraser, *Berkeley*.
Fullerton, *Introduction to Philosophy*, chap. 12.
Höffding, *History of Modern Philosophy*, vol. 1.
Külpe, *Introduction to Philosophy*, chap. 3, sec. 26.
Sellars, *Critical Realism*, chaps. 4 and 7.

CHAPTER VI

SKEPTICISM

Bewilderment.—The step from representative realism to idealism was well calculated to produce bewilderment in the minds of those who took philosophy seriously and were able to follow Berkeley's process of reasoning. Many, of course, did not try to understand his arguments. Because they did not know Locke's position, they did not see that idealism was a daring challenge to it. "It has been assumed that he drew no distinction between real things and imaginary things, that he made the world no better than a dream, etc. Arbuthnot, Swift, and a host of the greater and lesser lights in literature, from his time to ours, have made merry over the supposed unrealities in the midst of which the Berkeleian must live." Fullerton, *An Introduction to Philosophy*, p. 169. But idealism could not be conquered in this way, for it was the expression of a genuine reflective problem. Natural Realism had broken down. Could representative realism be carried through in its place? To deny that it could involved idealism or something very like it. A more fundamental analysis of human experience had to be made. It was David Hume who began this more searching analysis which has occupied philosophy ever since and is only now showing signs of having reached a satisfactory goal. Hume's reflections led him to skepticism. He could not see that either representative realism or idealism was well based. Locke and Descartes had obviously destroyed

Natural Realism, and Berkeley had just as obviously undermined representative realism. The task which remained was to take stock.

Hume's Summary of Results.—Locke had taught that the primary qualities of matter, which are copied in human ideas, inhere in a material substance of an *unknowable* character. Descartes' matter is extension and is known; Locke's matter is a "something I know not what in which qualities inhere and which supports them." While admitting that he had no idea of the nature of this underlying, unknowable substance which possesses the archetypal primary qualities, he felt unable to relinquish it. His argument is dialectical. Even primary qualities are only qualities and imply something more substantial as a correlative. They must be qualities *of something*. This something was Locke's corporeal substance. Locke's metaphysical reflection stopped at this point. He was not altogether satisfied and was inclined to express himself humorously about the theory. It was Berkeley who showed that the conceptual schema of an underlying, unknowable substance and supported primary qualities was essentially meaningless. Hence he rejected such a material substance and refused to go back of sensible things. In this, Hume agreed with him. "Thus the first philosophical objection to the evidence of sense or to the opinion of external existence consists in this, that such an opinion, if rested on natural instinct, is contrary to reason, and if referred to reason, is contrary to natural instinct, and at the same time carries no rational evidence with it, to convince the impartial enquirer. The second objection goes farther, and represents this opinion as contrary to reason: at least, if it be a principle of reason, that all sensible qualities are in the mind, not in the object. Bereave

matter of all its intelligible qualities, both primary and secondary, you in a manner annihilate it, and leave only a certain unknown, inexplicable *something*, as the cause of our perceptions; a notion so imperfect, that no skeptic will think it worth while to contend against it." Hume, *An Enquiry Concerning Human Understanding*, Sec. XII, Pt. 1. In other words, Hume admits that we are all naturally realists but that reason is unable to justify either Natural Realism or representative realism.

Hume's Attack upon Mental Substance.—Berkeley's animus led him to direct all his critical energy against the physical world. Consequently, he was traditionalistic in his treatment of the mind. It was in this domain that he left an opening for the keen analysis of Hume. Hume was not satisfied to speak of the self, soul, spirit or mind as though these were identical terms and easily understood. Berkeley had spoken of the self as an object of human intuition and had distinguished it from the sensible things perceived. He seems to have regarded it as a substance and the active cause of changes in our images. He also seems to have held that it somehow possessed what is perceived. As a true empiricist, Hume asked the vital question, How do we know this self? Is it, like Locke's material substance, a hypothesis? Or is it present in experience? His conclusion was epoch-making and began that psychology without a soul which has been dominant. Reflection on the mind-body problem, however, will lead us to an *organic mind*, a naturalistic version of Berkeley's mental realism.

Consciousness Is a Flux.—Modern psychologists have decided that the field of the individual's experience is constantly changing. This changing field of experience they call consciousness. Hume was one of the first to state

this doctrine clearly and unambiguously and with a definite idea of its implications. It is such a classic statement that it deserves full quotation and interpretation. "For my part," he writes, "when I enter most intimately into what I call *myself*, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch *myself* at any time without a perception, and never can observe any thing but the perception. When my perceptions are removed for any time, as by sound sleep; so long am I insensible of *myself*, and may truly be said not to exist. . . . Our eyes cannot turn in their sockets without varying our perceptions. Our thought is still more variable than our sight; and all our other senses and faculties contribute to this change; nor is there any single power of the soul which remains unalterably the same, perhaps for a moment. The mind is a kind of theatre, where several perceptions successively make their appearance; pass, repass, glide away, and mingle in an infinite variety of postures and situations. There is properly no simplicity in it at one time, nor identity in different; whatever natural propension we may have to imagine that simplicity and identity. The comparison of the theatre must not mislead us. *They are the successive perceptions only, that constitute the mind; nor have we the most distant notion of the place, where these scenes are represented, or of the materials, of which it is composed.*" Hume, *A Treatise of Human Nature*, Bk. I, Part IV, Sec. VI.

Hume is convinced that we are confined to our changing experiences. There is nothing permanent or substantial about these. The mind is for him but a term for this ever-changing flow of experiences to which each individual is confined. If we suppose that there is a larger world

of existence in which these minds somehow are, we must admit that we cannot experience this world-setting of our minds. We cannot peep out in any literal sense to see where we are. We may call this logical conclusion of English empiricism mental pluralism. There are many minds—why should we allow ourselves to doubt that?—but how these minds are joined to the rest of reality—if there be something more inclusive—we cannot tell. Such is Hume's rugged and fearless skepticism. He has carried Locke's representative realism with its theory of knowledge to its logical conclusion.

Hume's Rejection of Berkeley's Spiritualism.—It will be remembered that Berkeley based his construction upon certain premises. He assumed with Locke and Descartes that our ideas must be caused or controlled by something external. This something must be active. But the only experience of activity which we have is that of our own minds. Hence mind must be assumed to be the active agent. Our own minds are obviously not powerful and comprehensive enough to account for our orderly perceptual experiences. Hence we must postulate a supreme mind as the controlling and active agent whose deeds lead us to conceive of physical nature. Such is Berkeley's chain of reasoning. Let us examine Hume's objections.

We have already noted that Berkeley had not sufficiently analyzed the subjective side of experience. He seems to have taken it for granted that he experienced a sense of activity in volition of an almost creative or productive sort. It is this that Hume denies. Ideas arise in our minds but we do not know why. The psychologist speaks of the association of ideas and tries to explain their coming and going by association processes. But assuredly we

are not aware of any productive agency in our will which brings forth thoughts. When thoughts come, we are often enough surprised by them. "Volition is surely an act of the mind, with which we are sufficiently acquainted. Reflect upon it. Consider it on all sides. Do you find anything in it like this creative power, by which it raises from nothing a new idea, and with a kind of *Fiat*, imitates the omnipotence of its Maker, if I may be allowed so to speak, who called forth into existence all the various scenes of nature? So far from being conscious of this energy in the will, it requires a certain experience as that of which we are possessed, to convince us that such extraordinary effects do ever result from a simple act of volition." *Enquiry*, Sec. VII, Pt. I.

Thus Hume appeals to a keener analysis of experience than Berkeley had made to refute the latter's superficially persuasive argument. We are ignorant of anything of the nature of productive or creative activity as much in ourselves as in sensible nature. *We are aware of directed change but not of production.* Modern psychology agrees with Hume's analysis although it is more voluntaristic.

By means of this extension of analysis, Hume showed that Berkeley's arguments against the existence of a physical world apply equally against the existence of a creative spiritual source. "Were our ignorance, therefore, a good reason for rejecting anything, we should be led into that principle of denying all energy in the Supreme Being as much as in the grossest matter. We surely comprehend as little the operations of one as of the other. Is it more difficult to conceive that motion may arise from impulse than that it may arise from volition? All we know is our profound ignorance in both cases."

Taking Stock.—Many thinkers have been too impatient to do justice to Hume's searching analysis. They either have not seen that it was a necessary step or have been offended by his frank rejection of impossible positions. But theory of knowledge is a science and must follow the facts. Let us, therefore, ask ourselves what Hume proved. His very skepticism had its positive side which few thinkers have been capable of seeing because they have been attending to its negative side. This negative interpretation was due to the fact that they could perceive no way out. As soon as such a way opens up, an entirely different setting can be given to Hume's veracious skepticism.

In the first place, Hume gives up the substance-quality schema for both the physical world and the mental. The mind is for him simply the flow of the individual's field of experience, his changing consciousness. This empirical mind is given and is somehow experienced together. He takes it for granted, moreover, that each individual is confined to his own consciousness. In the second place, he sees that, if there are realities outside of these minds, they cannot be perceived nor intuited. He is completely dissatisfied with representative perception as a theory of knowledge, also, for the reasons advanced by Berkeley. So long as we think of sensible things, it is impossible to separate the primary from the secondary qualities, and it does not seem meaningful to think of something mental as *like* something non-mental. But a deeper motive appears to have lurked in the background. Our ideas do not introduce us into the dynamic processes in nature. We are obviously outsiders looking at shadow shapes but unable to penetrate into the very process of immanent change which, we are yet convinced, expresses the reality

of the world. Even the primary qualities are passive and reveal nothing of the tension of creative activity. *And the only way to account for this externality of our ideas to things is to admit that Natural Realism has suggested a wrong ideal to the human mind.* If physical things themselves were present in the field of experience, more of the secret of their powers and capacities should be revealed in perception. For Natural Realism, to know is essentially to intuit the thing, that is, to *be* the thing. Its life and nature should not be hidden from us if it, itself, is present for our inspection. There is no reason why this inspection should not be penetrative, sympathetic, revelatory, why the thing should not lose all shame and present its most hidden springs and energies. Such possible knowledge is the knowledge the thing might be supposed to have of itself.

The question which Hume raises in our minds is this, Has he not shown once for all that such knowledge as the human mind has does not involve either the presence of that which is known in the field of experience or the presence of a substitute copy? His skepticism is a reduction to absurdity of this naive view of knowledge and the preparation for a more searching investigation into the nature of our actual knowledge about the physical world. What, indeed, is the nature of human knowledge? And what are its conditions? It is generally supposed that a German thinker, Immanuel Kant, added to the analysis of experience which Hume had made certain essential elements. For instance, Kant speaks of the *categories* as essential forms of human knowledge. Let us see what he means by this term and whether it offers a clue to a new departure.

References

Hume, *Treatise on Human Nature*, Selby-Bigge edition. *An Enquiry Concerning Human Understanding.*
Calkins, *The Persistent Problems of Philosophy*, chap. 6.
Höffding, *History of Modern Philosophy*, vol. 1.
Huxley, *Hume.*
Knight, *Hume.*

CHAPTER VII

THE PERIOD OF PREPARATION

Kant Tries to Meet Hume's Skepticism.—After Hume, the main current of philosophy swings from the British Isles to Germany. The German philosopher, Immanuel Kant (1734–1804), sought a way of escape from the apparently negative conclusions to which Hume had been led. I shall try to give as simple and clear a statement as I can of Kant's teaching and outlook. Kant did not refute Hume, but suggested a more adequate empiricism than Hume's. The strange thing about this empiricism, however, is that it masqueraded as a blend of British sensationalism and Continental rationalism. Experience is, for Kant, a combination of *a posteriori* sensations, due to the stimulation of the mind by an external world, and *a priori* forms inherent in the mind.

Thus it is generally acknowledged that Kant stressed the constructive character of the human mind. The world as we experience it is not a gift to our senses but a very complex piece of architecture. Kant tries to lay bare the plans of this mental construction by means of which sensations are organized together and made into sensible things regarded as permanent and common and independent of the self. He speaks of this active production of the distinctions with which we are all familiar as due to the categories, which are asserted by him to be expressions of a Transcendental Ego.

Into the more technical aspects of Kant's analysis we

need not enter. It has been pointed out again and again that Kant's statement of the problem is preëvolutionary. He does not regard the mind as a growth but as a creation endowed once for all with certain fixed capacities. When we remember that he wrote in the eighteenth century and under the influence of the Continental philosophers of the seventeenth century we are not surprised at this ungenetic approach.

Kant Stresses Conceptual Knowledge.—Hume had tended to reduce all our knowledge to the level of associations. He did not do justice to the work of active construction and organization which goes on in our minds. On the whole, he was a sensationalist; and this was because he was attacking the older forms of rationalism with their acceptance of a reason that did not have a genetic relation to immediate experience. The consequence was that he did not do justice to actual experience. Association dominates over judgment.

Hence, in opposition to the over-simplifying tendency of sensationalistic empiricism, Kant inaugurated what has finally come to be a more adequate empiricism. He began by analyzing mathematical knowledge as an actual possession to see what it involved. He came to the correct conclusion that such knowledge is not a mere reproduction of what is given in perception but is a genuine achievement in which new truths are discovered. This result he expressed technically by saying that in mathematics we have *a priori* synthetic knowledge. It is *a priori* in the sense that it is not based on particular observations, and it is synthetic in the sense that it is not the statement of a mere analysis of concepts we already possess. We must admit that Kant's protest had value against the psychology and logic of Hume but it is, nevertheless, true

that he gave his own position a mythological setting by retaining the older rationalism. Both Hume and Kant have been superseded by the more adequate analyses of modern philosophers. Theory of knowledge is to-day based on the conclusions of modern psychology and logic.

Two Meanings of the Word Knowledge.—From Locke to Hume, the British thinkers had concerned themselves with the problem of the physical world and the nature and extent of our knowledge of it. Starting with the acceptance of representative perception, they gradually were convinced that we do not possess this kind of knowledge of the physical world. We have seen that their reflections culminated in the idealism of Berkeley and the skepticism of Hume. Thus physical realism came to an *impasse.* On the whole, philosophers were unwilling to relinquish their belief in a physical world but did not see how they could justify it nor what the content of their knowledge could be. In Scotland, there arose a reaction led by Reid (1710–1796) which sought to return to common sense by sheer force of reiteration. Reid is valuable as a proof of the strength of those realistic meanings to which we have so frequently referred.

But knowledge can have another meaning. *It is that which the human mind accepts.* It is that which is judged to be universal and necessary. We all pass judgments and accept propositions. The various sciences are, indeed, nothing but systems of knowledge in this sense. Data, laws, theories, hypotheses, what are these but examples of knowledge? We may say, then, that human knowledge consists of those propositions which are tested and accepted as true. That we have such knowledge is an empirical fact which nobody doubts. The methods by which it is built up are carefully studied by logic.

It is obvious that a philosopher can devote his attention to the study of the nature and conditions of actual human knowledge without settling the question of whether there is a physical world and whether we possess knowledge about it. This second kind of knowledge can be examined by the mental sciences without regard to the first meaning of the term.

Kant and Hume Skeptical of the First Kind of Knowledge.—As a matter of fact when it comes to a question of the first kind of knowledge, there is little to choose between Hume and Kant. "Kant did not try to refute, as did Reid, the doctrine, urged by Descartes and by his successors, that all those things which the mind directly perceives are to be regarded as complexes of ideas. On the contrary, he accepted it, and has made the words 'phenomenon' and 'noumenon' household words in philosophy." Fullerton, *An Introduction to Philosophy*, p. 176. Let us glance at the main outlines of his theory of knowledge.

Kant speaks of the world we perceive and conceive, the sensible world and the conceptual world of science, as *phenomenal.* He teaches that sensible things are products of the ordering of sensations under the mental forms of space and time. These spatial and temporal sensation-complexes are then solidified and organized in relation to one another by the categories of substance and causality. The result of all this ordering and organizing of sensations by the mind is the objective world which we actually experience and ordinarily take to be independent of the mind. But Kant admits that there is a real world which controls our sensations. His position in this regard is essentially the same as Hume's. Perhaps the only difference between them is that Hume was better acquainted

with Berkeley's idealism and so expressed himself more skeptically of this ghost of the physical world. So far as theory of knowledge is concerned, then, there is little difference between Kant and Hume. Happily, Kant has expressed himself clearly on this point. "Idealism consists in the assertion that there are none but thinking beings, all other things, which we think are perceived in intuition, being nothing but representations in the thinking beings, to which no object external to them corresponds in fact. Whereas I say, that things as objects of our senses existing outside us are given, but we know nothing of what they may be in themselves, knowing only their appearances, *i. e.*, the representations which they cause in us by affecting our senses. Consequently I grant by all means that there are bodies without us, that is, things which, though quite unknown to us as to what they are in themselves, we yet know by the representations which their influence on our sensibility procures us, and which we call bodies, a term signifying merely the appearance of the thing which is unknown to us, but not therefore less actual. Can this be termed idealism? It is the very contrary." Kant's *Prolegomena*, Sec. 6, Remark 2.

While Kant's use of terms is not as accurate as could be desired, it is easy to make out his meaning. The objects within the field of human experience are mental and are to be called phenomena, while the conditions of those objects, which are extra-mental, are to be called things-in-themselves or noumena. The Kantian thing-in-itself is that "unknown, inexplicable something, as the cause of our perceptions" of which Hume speaks. The phenomenon is, for Kant, a function of the interaction of the mind and this necessarily assumed realm of things-in-themselves. Like Hume, he has rejected representative realism and has

landed in skepticism. Because he does not doubt the existence of this realm outside of the field of the individual's experience but only our possession of knowledge of it, his position is called *agnosticism*. We are forced to believe that there is an extra-mental world but we can never know its nature.

Kant's Doctrine of the Categories.—We have already said that Kant began a more adequate analysis of experience than had been developed up to his time. What we shall try to do now is to indicate the real contribution he made and to separate the drift of his teaching from his somewhat confused statement of it. Hume did not do justice to the structural side of experience. He was too much of a sensationalist to be a true empiricist. From Berkeley he had accepted the view that we do not possess abstract ideas but are actually limited to 'impressions' and their fainter reproductions called images. He seems to have thought of the field of the individual's experience as simply a cluster of such impressions and images.

Kant saw that this analysis was quite inadequate. Knowledge involves very complex ideas somehow understood as wholes. "Columbus discovered America in 1492" is a complex proposition which is yet grasped together as a significant assertion. Logic can never admit Hume's atomistic sensationalism for a moment. It is not true to experience as we actually have it. Kant sought to remedy Hume's error by introducing another kind of mental element which, combined with sensations and images, would account for experience as it is. His problem may be called one in structural psychology. What can we add to sensations to make percepts, concepts, judgments and systems of scientific knowledge? Kant taught that the mind in its own right contributes *unsensational*

elements, or forms, and combines these with sensations in such a way as to give us our actual experience. These unsensational elements he calls the categories.

The problem which Kant raised is, as we have suggested, one for psychology and logic to solve. Do we ever begin with atomic sensations? Are not relations and meanings present in our experience from the first? Modern psychology answers "no" to the first question and "yes" to the second. Hume made a false start and Kant was too much influenced by the old rationalistic notion of the reason as a distinct faculty to make a fresh beginning.

Percepts are experienced as unitary objects having various distinguishable aspects. The meaning of permanence is infused into them and so we regard them as things. Along with this meaning is that of independence. These meanings give the percept the appearance of substantiality and together constitute what Kant calls the category of substance. In other words, percepts are products into whose making we can penetrate somewhat only by reflection and experimental analysis. The psychologist thinks of the percept as the reflection in consciousness of the functioning together of a system of neurones associated together. Is the unity of the percept an element which corresponds to this functioning together? At any rate, Kant, who thought of it as contributed by a rational faculty, calls it a category.

Perceptual objects, again, appear in the field of experience as suggesting other objects with which they have been connected. The individual reflects upon the order in which his experiences come and is led to postulate a causal relation. This objective relation by means of which events are combined into systems is a further distinction which must be recognized. It, too, Kant calls a category.

When, at the present day, we come to reflect upon Kant's demand, we see more clearly than he did that he is demanding an adequate logic of science and a psychology which harmonizes with it. This demand is being met by both logic and psychology, by the latter perhaps more slowly than by the former. Both of these mental sciences acknowledge the presence of meanings and concepts in the field of the individual's experience. Such is the more adequate empiricism for which Kant almost unwittingly paved the way.

Kant Thinks of the Categories as Subjective.—Suppose we take space, time, substantiality, causality and individuality as categories, that is, as fundamental characteristics of our organized knowledge. Kant thinks of these elements as subjective in a double sense. They do not arise in our experience as meanings growing out of the behavior of perceptual objects, and they are contributed by an Ego which has no apparent relation to the world of things-in-themselves. Thus Kant has no evolutionary, genetic idea of the categories which would permit of their being responsible to an objective control. On the contrary, they are innate possessions of a determinate and subjective understanding.

For Kant, then, the categories are subjective in two senses. They are innate and they have no significance for the world of things-in-themselves. Let us consider the first meaning of the term subjective first. The historical setting of Kant's teaching will make this meaning clear.

Wolff, a predecessor of Kant, had taught that the categories are actual entities in a world independent of the mind, a view which savors of Cartesianism. The mind possesses concepts of these categories and these concepts

are intuitions or representations of an independent reality. We may speak of this outlook as *representative conception* or intuitionalistic rationalism. The idea of knowledge is evidently analogous, to say the least, to representative perception. Wolff's theory of knowledge is of interest to us because our own view must be contrasted with both his and Kant's. The point is, that Kant makes an advance upon Wolff's representative conception that corresponds to the step taken by Berkeley and Hume past representative perception. Knowledge cannot be a copying of an external reality. Wolff's theory of knowledge can be outlined as follows:

	World of Consciousness	World of Reality Independent of Consciousness.
Sense	Sensations of Color	
	Sensations of Sound, etc.	
Thought	Conceptions of Substances	Real Substances
	Conception of Cause	Real Causality
	Conception of Space	Real Space
	Conception of Time,	Real Time,
	etc.	etc.

(cf. Calkins, *The Persistent Problems of Philosophy*, p. 199.)

It is interesting to find that Hobbes (1588–1679) maintains an essentially similar position. He distinguishes between *real* and *imaginary* space and asserts that the latter is an effect in us of the former. Based upon this causal relation, he seems to imply a cognitive value for the imaginary space. It is a category in the Wolffian sense. "The extension of a body is the same thing with the magnitude of it, or that which some call real space.

But this magnitude does not depend upon our cogitation as imaginary space doth; for this is an effect of our imagination, but magnitude is the cause of it; this is an accident of the mind, that of a body existing out of mind." Hobbes, *Concerning Body*, chap. VIII, sec. 4. And he defines this term accident for us in the following way: "They answer best that define an accident to be *the manner* by which any body is conceived; which is all one as if they should say, an accident is that faculty of any body by which it works in us a conception of itself." *Ibid.*, sec. 2.

In opposition to Wolff and Hobbes, Kant taught that the categories exist only in the mind. He did not believe that they could possibly have any reality or significance apart from human consciousness. We might paraphrase Berkeley's teaching and say that Kant's view was that a category could be like nothing but a category. Imaginary space cannot be like or furnish a conception of a real space or magnitude outside of the mind. Hence Kant drew again the skeptical conclusion already drawn by Hume. Knowledge can be only a presentation of constructs within experience. Knowledge is a knowledge of phenomena within experience. But if the world of things-in-themselves is neither spatial nor temporal, it would seem to be nonsense to speak of it as the physical world. The only physical world there is for Kant is, therefore, the world of sensible things as this is developed and organized by the physical sciences; and this realm of objects obviously exists in human experience only. While different from the objects of the imagination and not, like these, under the control of our desires and wishes, it is yet only mental.

We shall now make use of the more adequate empiricism which has grown up since the days of Hume and

Kant in order to find a way out of skepticism. Is there not another possible meaning for knowledge besides representation? And if so, may we not possess genuine knowledge of an independent reality which can rightly be called physical? Two investigations are necessary if we are to fulfil this purpose. We must study the field of the individual's experience and the distinctions characteristic of it, and we must analyze the reference and character of the knowledge actually possessed by us. May it not be that representative realism is the expression of a wrong interpretation of knowledge, an interpretation still biased by the assumptions of Natural Realism? Must knowledge be considered the possession of mental objects which are *like* entities outside the mind? If representative realism is founded on a misconception of knowledge, the idealism of Berkeley and the agnosticism of Hume and Kant can be regarded as its *reductio ad absurdum*. As yet, I can only give the hint that *reflection must pass from the attitude and habits associated with perception to the distinctions characteristic of judgment if it is to gain the proper notion of what knowledge is*. I think that it must by now be clear to the student that representative realism did not take this step. To know by means of ideas which are *like* physical reality is only an indirect perception. For this reason, the view of knowledge held by representative realism has usually been called representative perception.

We shall now try to avoid the psychological and logical blunders of Hume and Kant by getting in touch with the advances made in these two mental sciences since their day. The result should be a more adequate empiricism than Kant, with the best of intentions, could achieve. We shall be led to distinguish between the

categories, as characteristic features of both percepts and cognitive ideas, and the *mental capacities* which condition the individual's consciousness. Kant confused these two things because of his rationalistic bias toward innate ideas and his acceptance of a given manifold.

References

Kant, *Critique of Pure Reason* and *Prolegomena.*
Calkins, *The Persistent Problems of Philosophy*, chap. 7.
Höffding, *History of Modern Philosophy*, vol. 2.
Paulsen, *Kant.*
Prichard, *Kant's Theory of Knowledge.*
Wenley, *Kant and His Philosophical Revolution.*

CHAPTER VIII

THE FIELD OF THE INDIVIDUAL'S EXPERIENCE

From Natural Realism to Descriptive Empiricism.—In the preceding pages, our thinking has moved progressively from the standpoint of Natural Realism to what may be called descriptive empiricism. After the breakdown of common-sense realism, we passed to the study of certain typical thinkers of the past and watched the deepening of the problem set for our thought. More and more the conclusion grew up within us that a critical knowledge of the individual's experience was a pre-condition of the solution of these problems. Instead of starting with a hasty view of what knowledge must be, let us try to discover what human knowledge actually is and how it arises. Let us carefully examine the distinctions characteristic of experience and then watch them develop under the stimulus of reflection. The brief study we have made of certain typical philosophies, will surely help us in our effort to carry through such a critical study. Philosophy must be founded upon a genuine empiricism.

Both common sense and science hold that there is an independent, material world and that we have pretty direct knowledge of it. At the more naïve level, the belief is that the individual perceives physical things and that the actual physical world is thus open to his inspection. Knowing is seeing. "All unreflective thought is in a certain sense sensualistic, because it regards sense percep-

tion as the most reliable source of knowledge. The Greek word oida—I know, is the perfect tense of the root id, which signifies *to see*. Knowledge, therefore, in the popular understanding of the Greeks, was originally equivalent to having seen. An interesting proof for this popular conception is found in the passage of Homer's Iliad, 2, 484ff., where the poet appeals to the muses, who are able to see everything and who, therefore, know all things. It is, furthermore, characteristic of this stage of thought to identify the processes of perception and reflection, the latter being regarded as a species of sense perception." Jerusalem, *An Introduction to Philosophy*, p. 89. At a more critical level, either something of the nature of a copy-theory of knowledge is implicitly held or the *nature* of knowledge is shoved into the background by the *certainty* that we do have knowledge. That this should be the case is very natural, and it is very interesting to find that Locke often slips back into this attitude in spite of his evident desire to be critical. With Locke, there was a fair balance between the certainty that we have knowledge and the curiosity to know exactly what knowledge is. With the less speculative man, on the contrary, assurance overpowers such tendency to analysis as may exist.

The critical examination of the history of modern philosophy has led to the following conclusions: Reflection early breaks down Natural Realism and some form of representative realism takes its place. Knowledge is now regarded as the possession of *ideas* which are *like* the physical world. This outlook is obviously an adjustment to the forced admission that ideas and not physical things are present to inspection. Only think of ideas as like things and you need scarcely regret Natural Realism. Locke pushed forward to selective representative realism under

the suggestion of physics. Only certain aspects of our ideas are really like physical things. These are the primary qualities. But further reflection (Berkeley, Hume and Kant) revealed that this adjustment is untenable. Can ideas be like things? More and more this view of our knowledge of the physical world was doubted. The result was skepticism or, to use a more modern term, agnosticism. It is true that Berkeley hastily erected a spiritualistic metaphysics to take the place of the deposed physical world, but his hasty construction was set aside by Hume. But Hume's skepticism has a positive as well as a negative side. This positive side is the anticipation of what is to-day called *positivism*. If we can gain no knowledge of an independent realm, does not such a realm lose all meaning for science? Must we not consider the physical world, then, as only a name for the objects which we perceive and conceive and which we organize into a system characterized by empirically discovered laws? Of only one kind of knowledge can we be certain, the knowledge which consists of the objects which we apprehend, and this undeniable knowledge exhausts the content of both science and common sense. We called this *the second meaning of knowledge*. All that can be known, sensible things, facts, laws and theories, is within experience. What we apprehend and understand is mental. The skeptic will say: "There may or may not be an independent physical world; we may or may not have knowledge of it; but we can at least be certain of the mental objects we apprehend." Skepticism is, after all, a relative position.

Whose Experience?—Hobbes, Berkeley, Locke and Hume did not doubt that the individual is confined to his own field of experience or to his own *consciousness* as it is usually called. You cannot share with me in any literal

sense my feelings, percepts, concepts and judgments. Your consciousness does not overlap mine as one line crosses another and so shares with it a common point. Each person somehow lives in his own world even though he 'communicates' with others and understands what they are thinking about. Of course, we have here a genuine problem for reflection. If each of us lives in his own consciousness, what is communication and mutual understanding?

Locke contrasted the one physical world with the many minds which know it and which it affects. Berkeley followed Locke and accepted a plurality of minds. Hume adopted the same position as obvious and indisputable. Unfortunately, these thinkers were so engrossed with the problem of the physical world that they did not see that this pluralism of minds which they accepted involved a similar problem. If I am confined to my own consciousness, how can I know that you exist any more than I can know that an independent physical world exists? In a very real sense, you are for me a construct in my consciousness just as the perceived and conceived objects are which common sense takes to be physical things. We must conclude that these thinkers did not carry their analysis to its logical implication and so missed a real clue to the correct meaning of knowledge.

Mental Pluralism and Solipsism.—Solipsism is a term which we shall meet with again later and we may as well become acquainted with it in the present connection. As a term in theory of knowledge, it means that the individual can know only objects which are in his personal field of experience or consciousness. But if an individual can know only his own personal mental objects, what right has he to assert that there are other persons besides him-

self? Assertions must be based on knowledge. He may have faith that there are other persons, but faith is a different affair. Now the majority of critical thinkers to-day are of the opinion that Hume's position involves solipsism. But we all feel that a position that involves solipsism is imperfect, that it has not solved the problem of knowledge. In fact, I am inclined to regard solipsism as one of the crucial tests of a theory of knowledge. If it leads to such an absurdity, we must think again.

If we cannot apprehend an independent reality either directly (Natural Realism) or indirectly (representative realism), how can we know anything outside of our own consciousness? But other selves are in the same situation as the physical world; for they are by definition independent realities. He who has failed to solve the problem of knowledge for the one has failed for the other. Knowledge seems to involve an impossible *transcendence* of one's own consciousness. Can it be denied that reflection faces genuine problems?

Kant's Appeal to Consciousness-In-General.—The British empiricists held to mental pluralism to the last though the rejection of representative realism logically landed them in solipsism. They did not realize their danger because they were interested in the problem of the physical world and in psychological analysis. The rejection of Natural Realism by John Locke is partly founded on, and is certainly bound up with, the physiological theory of perception to which we referred in an earlier chapter (Chapter III). If my ideas are caused by the stimulation of my senses, they cannot be identical with yours which are functions of the stimulation of your senses, however similar we may suppose them to be. Both Berkeley and Hume presuppose this way of approach even though they

reach conclusions not entirely harmonizable with it. Thus Hume calls sensations impressions and Berkeley speaks of the senses. We may say, then, that the British empiricists assume that each individual is confined to his own field of experience. I analyze my consciousness and state what I find and expect that you who analyze your own experience will reach similar distinctions.

But Kant made a new departure which has had vicious results. From it has flowed what is called *objective idealism*, which may best be described as an attempt to combine realism with idealism by an appeal either to a supreme and all inclusive mind or to a logical abstraction called consciousness-in-general. Because Kant's departure from the previous tradition in philosophy had such important consequences, it is necessary to study it in some detail.

Kant distinguishes between what he calls the *transcendental self* and another self which he calls the *empirical self*. The transcendental self is essentially a logical function which expresses itself in the categories to which we referred in the previous chapter. It is identical and permanent while the empirical self is momentary and many-colored. This transcendental self is a thinking, active, synthetic, organizing self which lies in the background and builds up the field of experience from the manifold of passive sensations which are presented to it. To express this theory of a necessary agent Kant often refers to it as the *synthetic unity of apperception*. But he goes even farther than this. He asserts that the transcendental self is a universal self. Let us see why he does this. It must be remembered that Kant sometimes writes as though he were making a descriptive analysis of experience and sometimes as though he were developing theories to account for what is given in experience. His main argument

for the belief that there is a universal self is, however, as follows: There are things in space outside me and I am able to contrast these things with my private ideas. Kant insists that there is a fundamental difference between these two types of objects. Apparently, he assumes that percepts are private ideas while phenomenal objects are common and essentially neutral objects. But both of these objects are mental. Therefore we must assume two different kinds of selves to which to attach them. Corresponding to the phenomenal object in space is the transcendental self which is a universal self. Correlative to the percept is the empirical self. What must we say of this construction?

A little reflection must convince one that Kant is building upon an unreal distinction. We do not perceive percepts which are non-spatial. What the common-sense man calls a physical thing, open to his observation, the psychologist calls a percept. Kant duplicates the immediate objects of apprehension in the field of the individual's experience (consciousness) and calls the one a personal idea and the other an object or phenomenon outside of me. And this is a tremendous blunder which vitiates his whole philosophy. Had he read Hume a little more carefully, he would have become aware that he was guilty of what Hume calls the philosophical hypothesis, that is, the duplication into thing and percept of what is immediately perceived. Thus Kant duplicates objects in the field of the individual's experience and connects one with the empirical self of the individual and the other with a self created for the purpose, a universal, transcendental self. In this way, he is able to be a realist, so far as the individual is concerned, and yet be an idealist, in an abstract sense, by making the neutral object mental

and correlative to this universal self. But as soon as we realize that there is no need for this duplication, we see that his construction is false and ungrounded. *Mental objects, whether dominantly perceptual or conceptual, exist only in the fields of experience of particular individuals.* Kant's analysis is a blunder. We must return to the mental pluralism of the British thinkers.

The Standpoint of Descriptive Empiricism.—Let me, then, attempt to describe my field of experience in the hope that others will discover this description holds for their fields. I shall endeavor to find what elements are given in my field and how they are arranged. Such an empirical description, which is not in the service of any epistemological theory, is the only satisfactory foundation for an epistemology. But what is this descriptive empiricism? It is a description by the individual of his field of experience on the basis of an inspection deepened here and there by introspection.

The Subject-Object Contrast.—Philosophers have been accustomed to speak of a subject-object relation as present in experience. We must ask ourselves whether there is anything of this nature given in the field of the individual's experience. When I remark that I see this book, what exactly is given in my experience? So far as I can make out, nothing but the perceptual object which I call the book and, in contrast to it, a self-feeling merging with my attitude of attention to the book. This self-feeling merged with the attitude of attention is called by philosophers the subject-self. Thus my present field of experience is a togetherness of elements in which there is a duality, the perceptual object in spatial relation to my body and the feeling of attention centered in my body and surrounded, as it were, with my sense of bodily existence

and attitude. Such ideas as come and go float vaguely between these two poles of my field though they tend to approach the subject-self more closely than they do the perceptual object.

The object pole of the field is usually clearly given. We are outward-looking and mainly interested in the things which we *apprehend*. At this moment, the object side of my field is clear and complex. I see many objects, books, scattered sheets of paper, a typewriter in the foreground, a wall covered with light wall-paper and a picture hanging a little above in the background. At the level of Natural Realism, these apprehended objects would be called physical, and for me they are penetrated by these realistic meanings. But other kinds of objects may also be apprehended. I can think of mathematical objects, physical hypotheses, ideals of conduct, policies of state, and the gods of Greece. In all of these cases, I am outward-looking and inspect the more or less changing pole of objects known. And I know now that all these things are parts of my field of experience.

The subject pole is less clearly given as a rule. Sometimes I am so engrossed in the object side that I forget myself, that is, hardly feel myself. The college student who witnesses a crisis in a foot-ball game lives in the visual field of moving players. But, ordinarily, I am more or less aware of myself in both perception and conception. What is this self, and what is the nature of this awareness? So far as I can make out, it is entirely empirical and consists of a more or less conscious purpose suffused with organic sensations and with the sensations coming from the head, especially the eyes and forehead. This contrasted background over against which the object is set is an attitude which fluctuates from a sense of bodily presence to

the higher level of plans and purposes experienced dimly as *my* plans and purposes. And this *me* which enters is the self which has grown up in my body in touch with, and as qualifying, this subject pole of outward-looking attention. As I become more and more self-conscious in my inspection of objects, this subjective background swells by the intussusception of self-elements which, though within the field of attention, accept the contrast of the two poles of experience and ally themselves with the background of attitudes. It is clear that descriptive empiricism leads me, at least, to side with Hume as against Berkeley. Hume, however, did not do justice to the *structure* of the field of experience; he did not realize the importance of this contrast between the two poles of the field.

The Elementary Unity of Togetherness.—The field of the individual's experience, however complex, is yet a unity. It is, as it were, an expanse in which many things and feelings are present together. They are relatively distinct, yet continuous. Thus the subject-object contrast exists within a more comprehensive unity. It is a differentiation within the field which does not really separate what are contrasted. It is this fact of *presence together* which the contrast presupposes and which makes the one pole really an object and the other pole really a subject. Philosophy has been accustomed to recognize this situation of presence together in contrast by the use of the rather ambiguous term, relation. There is no subject without an object, it is said, and there is a subject-object relation between them. I fear that this relation is a fictitious entity if it means more than this presence together in the field of experience.

Is the Self Dominant in the Field of Experience?—Many of the older philosophers assumed that the self was

an agent which dominated the field of experience. It will be remembered that this was Berkeley's view. Ideas (objects in the field) are satellites of the self. But descriptive empiricism cannot assent to this view which is too evidently a theory rather than a fact. The rôle played by the self varies in different situations. In ordinary perception, the subject-self is only a vaguely felt presence which can best be described as an attitude and the seat of shifts in attention so far as these are voluntary. In all clear apprehension, this is the case. But when problems arise which demand reasoning and interpretation, the face of the field of experience changes. Reasoning and interpretation are processes which seem to intervene between the subject-self and the objective pole. They are processes which take time and involve the intervention of ideas, or thoughts, which are tentative objects which have a function to perform and therefore occupy a middle position between the subject-self and the object pole. The self is more conscious of a purpose at this time, more visited by bustling plans and feelings, more vibrant to the presence of these ideas and suggestions in the middle ground of the field. *I am reasoning about* these things. The subject pole reaches out farther into the field and the middle of the field is now a swift current flowing between the subject-self and the more stable realm of objects.

In desire, and still more in conscious planning and willing, the subject-self acquires new emphasis. There is a swing inward of the attention to ideas which are thought of as ways of expressing personal wishes and ideals. And such wishes, ideals and purposes arise tinged with the feeling of possession. They are objects, but objects attached to tendencies which are rooted in a tense back-

ground of vague feeling and attitude, which is the home of the subject-self.

The conclusion which descriptive empiricism draws in answer to the question whether the self is dominant in the field of experience is essentially negative. Usually objects are more dominant than the self. At other times, the processes of reasoning and reflection intervene and widen the field. These processes are often spoken of as subjective processes. That term is misleading. At the level of Natural Realism, they are regarded as mental in contrast to the objects perceived. This classification thrusts them nearer to the subject-self than they actually belong. Very often in reasoning we live in the things which furnish us with the problem. Even in reasoning we may be essentially outward-looking. At still other times, the subject side of the field of experience is dominant, though practically never despotically so. Thus the field of the individual's experience is like a body of water moved by the tide. Now this, now that is lifted into prominence and then subsides. And, like the living ocean, it is in constant change.

References

Alexander, *Aristotelian Society Proceedings*, 1910–11.
Bradley, *Appearance and Reality*, chap. 9.
Russell, *The Problems of Philosophy*, chap. 4.
Dunlap, *Psychological Review*, 1914.
Fletcher, *Introduction to Philosophy*, chap. 15.
Moore, *The Refutation of Idealism*, *Mind*, vol. 28.
Sellars, *Critical Realism*, chaps. 4 and 5.
Ward, Art. Psychology, *Ency. Britannica*.

CHAPTER IX

DISTINCTIONS WITHIN THE FIELD

Two Dimensions of the Field.—Descriptive empiricism finds that the field of the individual's experience has two dimensions which may be called the *coexistential* and the *temporal.* In the preceding chapter we indicated a characteristic contrast in the coexistential dimension, *viz.*, that between the subject-self and the objects which are present to it. At the level of Natural Realism, this contrast is interpreted as a distinction between the concrete individual who perceives and the physical world which is perceived. It is obvious that both terms of this contrast lend themselves to the introduction of meanings of metaphysical import. We tend to think of the objects we perceive as substantial and independent realities and to consider the other term of the contrast, the perceiver, as also a substantial and independent reality. But we now realize that this is an interpretative development of a distinction within the field of the individual's experience. In this interpretative development of the subject-object contrast within the field of experience into the outlook of Natural Realism we can see the work and growth of those penetrative meanings which Kant called the categories. Very often, Natural Realism lends itself to a more reflective position called Natural Dualism, the acceptance of *two kinds of reality, mind and the physical, which are somehow given together and are yet clearly qualitatively different.* In just such a hasty way is both popular and even scientific

philosophy built up. But the student will now realize that such reifications of parts of the field of the individual's experience, however natural and however great their significance as *demands*, cannot be admitted. Descriptive empiricism calls a halt and asserts that we must try to understand the distinctions within experience before we go on to either a theory of knowledge or a metaphysics.

But the field of experience not only has a coexistential structure but it also has a temporal growth.[1] It is constantly changing as regards its contents. Just as we are convinced to-day that it is impossible to understand the structure of animals without some knowledge of their history, so we are becoming convinced that the field of experience, its structure and contents, is made clearer by a genetic approach. On the whole, psychology has been of the most assistance here. It is now seen that the objects in the field are constructs, or growths, which can be partially explained by logic and psychology. Of course, logic and psychology cannot derive the material which is woven into these objects. They cannot, for instance, explain why we see red colors and taste sweet and sour flavors. But they can trace the laws of growth and construction in the complex field the adult experiences. Psychology speaks of the laws of association by contiguity and similarity, while logic stresses abstraction and generalization. We shall refer to this genetic study of the field of experience again and again in explanation of the distinctions characteristic of the coexistential dimension.

The Coexistential Dimension Favors Realism.—We have seen that the coexistential dimension is the seat of

[1] The pragmatists have done yeoman's service in stressing this second dimension of experience. Their *epistemological obtuseness* has been due to their neglect of the first dimension.

the contrast between the subject-self and the part of the field which consists of objects apprehended. At the level of common sense, this contrast is interpreted entirely realistically. I suppose that I perceive the actual physical thing itself. And no wonder, for it is the only thing I can apprehend and it is shot through with realistic meanings. Natural Realism is natural; any other attitude at this level of reflection would be surprising. And Natural Realism easily passes into Natural Dualism, the acceptance of two given realities of quite different nature. Cartesianism is mainly a rationalistic refinement of Natural Dualism.

In the study of the outlook of common sense in an earlier chapter, we stressed the growth of realistic meanings in experience. It may be of interest to note that we can find the basis for this structure and for these meanings in our instincts themselves. Take fear for instance. Does it not imply attention to something which is felt as other than ourselves? Thus the instincts involve a structure of the field which arises in consciousness, a tension of organic reaction to the perceptual object which is the stimulus to this reaction. Many writers have laid stress upon the experience of resistance as the foundation of a sense of otherness; but I am inclined to lay more stress upon the necessary duality within experience which the instincts involve. This genetic problem is, however, a task for the psychologist. The philosopher must study the field of experience as it is and then assist the psychologist to explain it.

The Temporal Dimension Opposes Natural Realism.—We are aware of the *result* of genetic processes. They come to us as things and attitudes given. It is only closer study that presents us with glimpses of the processes

which have gone to the making of our perceptual and conceptual objects and the meanings which permeate them. But the more we study logic and psychology, the more we gain insight into the silent processes which weave our world. This knowledge, however, works directly against Natural Realism. If what we see are products of processes essentially personal and connected with human organisms, how can they be actual physical things? Hence, genetic study reënforces the work of reflection and helps to break down Natural Realism.

Things and Ideas.—In an earlier chapter (Chap. 2) it was pointed out that the outlook of common sense is not systematic. The distinctions within experience are more complex than the form of Natural Realism which we have stressed is inclined to admit. I have found that students who come into an introductory course in philosophy hesitate between asserting that they perceive physical things and that they perceive ideas somehow connected causally and cognitively with physical things. There seems to me no doubt that this distinction is vaguely present and that it can be made to stand out clearly if reflection is directed upon it. If the physiological theory of perception is accepted, or if the distinction between the thing and its appearance is run down, the conclusion follows that *ideas* (percepts) are apprehended and physical things believed in. "I think it is scarcely too much to say that the plain man believes that he *does not* directly perceive an external world, and that he, at the same time, believes that he *does* directly perceive one. It is quite possible to believe contradictory things, when one's thought of them is somewhat vague, and when one does not consciously bring them together." Fullerton, *An Introduction to Philosophy*, p. 33.

This distinction is developed pretty definitely by psychology. Consciousness comes to be a term which includes all the objects which are apprehended, whether these be perceptual or conceptual in character, and opposed to this class of objects is the physical world as this is *somehow known* by the physical sciences. The psychologist does not bother his head very much over the question as to how the physicist can know a physical world if he cannot perceive it. He takes it for granted that he can and simply follows the logic of his own reflections. *We may say, then, that the distinction between consciousness and the physical world is only a reflective development of the plain man's distinction between ideas and things.* Both are inevitable distinctions which press home to the reflective mind a definite problem. The first distinction raises the question, How can we know that there are things and what they are like if we perceive only ideas? The second, more developed distinction is the source of a deeper question, How can we know the physical world, which we assume, if we are confined to objects in consciousness? "It is evident that the working adjustment between psychology and the physical sciences is one that has grown up on the basis of the contrast-meanings of common sense and been strengthened by the respective methodologies and standpoints of the two groups. It is not one that has a systematic epistemology on which to rest." Sellars, *Critical Realism*, pp. 48–99.

But it must not be forgotten that we do have this distinction within experience. It is an empirical distinction whose significance must be interpreted by a wise and patient philosophy.

Sense and Imagination.—The writings of Locke are a store-house of shrewd distinctions. He points out that

an idea from actual sensation and another from memory are very distinct experiences. Ideas of memory and imagination can at pleasure be laid aside. "But if I turn my eyes at noon towards the sun, I cannot avoid the ideas which the light or sun then produces in me. So that there is a manifest difference between the ideas laid up in my memory (over which, if they were there only, I should have constantly the same power to dispose of them, and lay them by at pleasure), and those which force themselves upon me and I cannot avoid having." Essay, Bk. 4, Ch. XI, sec. 5.

We are all aware of this distinction, and there can be little doubt, that it plays some part in the growth of a realistic attitude toward the world we perceive. "To the objector who urges that the fire may be all a dream, Locke never tires of begging him 'to dream this answer'; that there is a manifest difference between dreaming of being in the fire and being actually in it, and at any rate the pain of the second experience makes the difference between our weal and woe, and determines us practically."

Now it must not be supposed that the reflection which breaks down Natural Realism teaches that we can ignore this distinction. Philosophy does not make the foolish attempt to deny any feature of the individual's experience. Because I call the object I see a percept, it does not follow that I can have the experience of walking through it.

A Thing and the Thought of It.—The distinction between a thing and the thought of it is somewhat different from that discussed just above. The first form of the distinction between a thing and the thought of it exists clearly at the level of Natural Realism. For common sense, there are two ways of knowing things, knowing them immediately by perception and knowing them con-

ceptually, or representatively, when they are absent. In the first case, the things themselves are present to inspection; in the second case, they are absent and yet present cognitively. This presence in absence is the presence of an idea, thought or concept of them. I apprehend an idea which is taken as a substitute for the thing so far as my cognitive purpose is concerned. The thought or concept has grown up in my mind in genetic touch with the thing as I perceive it. For this reason, I take it naturally as a representative of and, therefore, a cognitive substitute for the thing. It is this function of replacement which is signified by the preposition 'of.' It is not the thing but an *idea* of the thing.

But even at the level of Natural Realism the field of experience is not quite so simple as this. When I try to make such representative knowledge clearer in regard to its structure, I find that I have an accepted sphere of existent things some of which are qualified as not present to my apprehension and, as it were, between them and myself, as knower, an idea, or thought, which is qualified as *my thought of* an absent, independent thing. The idea *means* the thing and this meaning qualifies the idea—is, in fact, an essential part of it.

It should be noted that this distinction is purely empirical and is characteristic, at times, of the field of the individual's experience. *Knowledge of things in their absence is a genuine contrast within experience based on the capacity of the mind to distinguish spheres of existence.* The coexistential dimension of the field of experience becomes more complex than in perception. I can distinguish between myself as knower, the idea which contains knowledge, and the realm of objects known. The idea is considered mental and yet as having the function of containing

knowledge of the reality it means. Thus I now have an *idea of* the Capitol at Washington and distinguish between it and the actual Capitol which it means. The Capitol is present, not literally, but only in the sense that it is referred to and meant. It is the *reference* of the idea and not an apprehended object. It is not present in the field of the individual's experience except as meant; and we are all inclined to hold that such meaning is a mental affair.

Reflection on these Distinctions.—All these distinctions are more or less clearly present at the level of common sense. We must now ask ourselves how they can be adjusted to each other at a more reflective level. The distinction between sense and imagination obviously requires no marked adjustment. The psychologist connects this contrast, however, with the difference between peripherally-aroused and centrally-aroused experiences and so brings it into touch with the physiological theory of perception. The contrast between things perceived and my thought of them when they are absent also needs little adjustment. Things perceived must now be called percepts and considered mental. Both elements of the contrast are now seen to be mental, and the genetic relation which enables the one to be like the other to such a degree becomes comprehensible. We understand why the idea can mean the thing. It is the revival of the percept in another setting, and it is this setting and our reaction toward it which qualifies it as an 'idea of.'

At the level of Natural Realism, the thing which I mean and of which my idea contains knowledge is continuous with the things which I now apprehend. Thus the realm of objects known to which I contrast my idea is the perceptible world of supposedly independent physical things.

Thus University Hall, although I cannot at this moment see it and can only have an idea of it, is assigned to the same class of things as those which I perceive as I look out of the window here on Prospect Street. Thus I contrast the spheres of existence of *the idea which means* and *the object which is meant.* The one is the physical world, the other belongs to the mental realm. This contrast is empirical and we are all aware of it.

But when this contrast meets the contrast between things and ideas, as this latter develops around the problem raised by the breakdown of Natural Realism, serious reflection is demanded. If we accept the distinction between percepts and the realities, outside of the field of experience, which control them or, in other words, the distinction between the sphere of consciousness and an unperceivable physical world, it would seem that ideas in the cognitive or representative sense are only ideas of percepts. They are ideas of percepts of (controlled by) physical things. They give us knowledge of percepts, and it must be remembered that they claim to give us knowledge of what we perceive. But it must also be remembered that common sense takes the things perceived, which are steeped in all the knowledge that can be gained about them, to be independent physical things. It would seem, then, that the *idea* of what is perceived is, as regards its content, very little different from what is really at once perceived and conceived. Hence, if the percept is conditioned—though not mechanically—by an extra-mental realm, the idea is also controlled. Can reflection advance beyond this point? If we cannot take the position that controlled ideas are *like* that which indirectly controls them, is there yet in this control a justification of the reference to the physical world of what the human mind is forced

to consider knowledge? The mind seems to be in touch with the physical world and to reflect it actively in its own medium. *Perhaps the solution is that knowledge does not imply anything of the nature of a likeness between two apprehended or potentially apprehensible objects.* In that case, the flaw in representative realism does not lie in the rejection of Natural Realism but in the retention of an external and totally inadequate view of knowledge really based on Natural Realism. For Natural Realism, knowledge is the apprehension of the reality; for representative realism it is the indirect apprehension of the reality, either an apprehension through likeness as with Locke or through an identity of *essence* as with Aristotle and his modern follower, Santayana.

In the next chapter we shall pass to the standpoint of a more critical realism by showing how reflection, working hand in hand with logic, develops a meaning for the first kind of knowledge (Chap. VII) which is able to admit that the physical world is neither directly nor indirectly apprehended. As a preparation for this deeper insight into knowledge, we must note both the character of the reference in knowledge and the nature of the content of critical knowledge.

References

Fletcher, *Introduction to Philosophy*, chap. 23.
Fullerton, *Introduction to Philosophy*, chap. 4.
Locke, *Essay*, bk. 4.
Russell, *The Problems of Philosophy*, chap. 5.
Stout, *Aristotelian Society Proceedings*, 1910–11.
Sellars, *Critical Realism*, chap. 5.

CHAPTER X

THE REFLECTIVE DEVELOPMENT OF THESE DISTINCTIONS

What Is a Percept?—There are two ways of approach to percepts and perception, *viz.*, from the side of psychology and from the side of the logic of science. These two ways of approach are fairly distinct and should not be confused. The first way of approach is genetic and analytic; the second stresses the part played by perception in the achievement of knowledge.

At the level of Natural Realism, the percept is taken to be an independent thing which is perceived. But when we study this object of which we are aware, we soon realize that it exists only within the field of the individual's experience. Logic and psychology have succeeded fairly well in determining the conditions of these mental objects which appear to us so ready-made. They are growths whose history and conditions are being more clearly understood the more psychology is given a biological setting. "Perception, being the apprehension or awareness of an object, stands in a determinate, albeit indirectly determinate, relation to behavior. If there is no one inevitable response to an apple, a dog, a tree, or a man, there is at least a set of alternative possible modes of response within which the actual response will probably fall. Our customary and appropriate ways of treating an apple are characteristically different from our customary and appropriate ways of treating a dog or a man. Just

what particular response is demanded by an object on any given occasion depends on the situation of which the object is a constituent or factor. As a matter of fact, it is just this characteristic relationship to behavior which constitutes the very essence of objectivity. A certain complex of nervous excitations, *e. g.*, the 'visual appearance,' the 'smell,' the 'feel' of the apple, have become organized into a percept solely through the fact that they have come to call out a distinctive sort of behavior, have become coördinated into a functional whole. So again, a complex group of retinal excitations become organized into a visual perception of an apple because it has come to function as a whole in determining response." Grace A. de Laguna, *The Journal of Philosophy, Psychology and Scientific Methods*, vol. XIII, no. 23. But this is not all. There are no fixed limits for the content of this object. All the knowledge that we acquire joins itself to the perceptual nucleus and deepens the content of the object we think of ourselves as apprehending. What it "does" to other objects, its spatial relations, its properties, all these elements of knowledge enter into the percept and coalesce with it. But this deepening of the content of the perceptual thing does not conflict with the spatial boundary with which the percept begins. All of the added knowledge attaches itself to the colored, tangible, spatial object in the field and penetrates it.

So soon as we realize that the object is a mental growth, we are not surprised at its capacity to absorb these more conceptual elements, the knowledge about the thing which we gradually gain and henceforth read into the content of the perceptual object. Logic has taken up the growth of the percept at this point and studied the continual introduction of new elements. In perceptual judgment,

we start from a content about which there is no doubt and add, or reject, new relations and properties which suggest themselves. This process of growth can go on almost indefinitely. But the main point for us to note is that it goes on within the schema of Natural Realism, which is only a natural interpretation of the *empirical objectivity* which percepts possess, until reflection forces a re-interpretation. All of us tend to live and think within the common distinctions which have grown up. It would be strange were we not to identify perceptual objects with parts of the physical world. Why? Because, until reflection arises, they are one and the same thing for us.

The Logical Function of Perception.—When we enter the realm of science, we find another setting for the term, perception. A new demand has been introduced which subordinates the common-sense outlook. The preferable term is observation. We are not dealing with perceived *things*. Instead, we are seeking *fact of observation*, and the demand which governs the investigator is responsibility to such facts. The contrast between perception, in the sense of observation as furnishing the factual foundation of a scientific investigation, and perception as the apprehension of a physical thing, as it is mainly for common-sense realism, can be brought out in the following way: At the level of Natural Realism, I say that I perceive a red book. Redness is a *quality* of the book as a physical thing. The scientific investigator asserts *that* he sees a red color or has a red sensation when light waves are reflected from the surface of a physical thing so far from him and in such a direction. It should be noted that all the elements of this fact are either themselves facts or theories founded upon facts. The simplest fact is, that he sees a red color. But this fact is enlarged by its connection with

other facts, a source of illumination, absorption and reflection, direction and distance of the reflector. Slowly and carefully these facts are discovered and tested and related to one another and theories built up to explain them. When we study the logic of science, then, we are forced to conclude that perception is a term for the occasion of these primary facts. And such facts are judgments.

Scientific Knowledge an Achievement.—It is impossible for us to enter into the history of any particular science at this time. What we can do, however, is to analyze the foundations of a science like physics and the logical steps involved in its present form. Logic has no concern with the history of a science for its own sake but only so far as it helps to throw light upon the structure of the science. Now when we come to analyze physics, we find that its foundation consists of certain postulates which have been suggested by experience and confirmed by it, certain primary units of measurement with their corresponding definitions, certain classes of empirical facts and an established technique. Examples of such postulates are the uniformity of nature, the relative constancy of standard units, the value of the laws of thought, etc. The majority of scientists also assume the existence of a non-mental and independent world, but this assumption, while natural and, I believe, justified, is not necessary for the growth of the science. A typical unit of measurement is the unit of mass, the gram. Other units are the centimeter and the second. These three units are called the fundamental units, and other units expressible in terms of them are called derived units. Classes of empirical facts are the phenomena of motion, sound, light, heat and electricity.

When we come to analyze any system of physical knowledge, we find that it consists of facts organized together and interpreted in terms of theories and hypotheses. *These facts are not percepts, but propositions of an elementary character for which observation is an occasion.* Take the experiments of Regnault on the velocity of sound. "Between the years 1862 and 1866 Regnault carried on an exhaustive series of experiments for the determination of the velocity of sound both in the open air and in the water and gas pipes of Paris. In his researches Regnault made use of an automatic recording apparatus, by means of which an electric current was broken at the instant of firing the gun, and the interruption of the current was recorded upon a smoked paper carried upon the drum of a chronograph. At the receiving station the sound wave entered a wide cone, at the smaller end of which it impinged upon a thin rubber membrane, and setting it in motion broke a second electric current, and so completed the record upon the cylinder of the chronograph. By this means it would seem that the difficulties of personal equation were entirely obviated, but it was found that the membrane itself required time to receive and record the sound wave. The motion of the air particles cannot be imparted to the membrane instantly, and so a delay is caused in making the record, which is not constant but increases as the sound grows more faint. Regnault made experiments to determine the amount of this error, and allowed for it in his computations.

"In his experiments upon the velocity of sound in tubes, Regnault arrived at the following conclusions:

"(a) In cylindrical pipes the intensity of the sound wave decreases with the distance, and more rapidly in small tubes than in large ones.

" (b) The velocity of sound diminishes with the intensity. Loud sounds travel faster in tubes than faint ones.

" (c) The velocity of sound in pipes increases as the diameter of the pipe increases, tending toward a limit in very wide tubes.

" (d) The velocity is independent of the pressure, and of the mode of production of the sounds.

" Regnault gave as the result of his investigations, after all corrections had been applied, the value for a faint sound in a very wide tube, at 0° C.

$V_0 = 330.6 \ \frac{m}{sec.}$"

The logic of such an investigation is of more interest to a philosopher than it has usually been supposed to be. Is it not evident that the attitude is not identical with that of common sense, however much the scientist speaks of *things?* The *data* which he establishes and on which he bases his conclusions are obtained by observation but they are not perceptual things. In Inductive Logic, the methods of science and the means taken to avoid error are carefully studied, but it is seen that the data are propositions or elementary judgments conditioned by observation of a selective character within a setting of definitions, methods, theories and postulates. That we can achieve satisfactory data, agreed upon by all, is the prime condition of any science. But these data must not be regarded as percepts. That has been the mistake of the sensationalist in philosophy and, I fear, of those philosophers too dominated by the older British tradition of Locke, Berkeley and Hume. Modern philosophy must be founded on logic as well as on psychology. Or, better yet, it must be founded on descriptive empiricism interpreted by logic and psychology. It must be granted that science founds its conclusions upon facts and that such facts are propositions. Observation

(perception) is only the occasion of the discovery of facts. In other words, scientific facts cannot be reduced to sensations as so many philosophers have supposed.

But scientific data are the foundation and the occasion of the whole theoretical superstructure which we call scientific knowledge. And just as the data are propositions, so are the laws and theories which organize and interpret them. But the logical reference of these laws and theories is not downward to the facts but onward to the realm about which the scientist is seeking to gain knowledge. Such, at least, is the distinction which naturally arises in the mind of the scientist until it is met and challenged by idealism of the Berkeleian sort or by skepticism. The laws and theories are supposed to refer to, and hold of processes in nature outside of consciousness (the field of the individual's experience).

We may say, then, that science achieves systematic knowledge in terms of propositions; that these propositions belong to two logical levels, fact and explanation; that explanations are founded on facts and stimulated by them but do not simply refer back to them; that the systematic knowledge so achieved is thought of as holding for a realm independent of consciousness. It is knowledge of the second kind, but it is also accepted as knowledge of the first kind, that is, knowledge about an independent reality.

A Re-statement of the Distinction Between Things and Ideas.—In the preceding chapter, we saw that both common sense and science are inclined to admit that we perceive *ideas* and not things. While common sense fluctuates between the two positions and, on the whole, is prone to accept Natural Realism, science is distinctly in favor of the belief that we perceive ideas conditioned by an extra-mental and extra-cerebral realm. We noted that

the physiological theory of perception is accepted by both the physical and the mental sciences and that the result is the distinction between consciousness and the physical world. But descriptive empiricism points out that this is a distinction within the field of the individual's experience. It should be noted that this distinction has a factual basis and harmonizes with the arguments advanced by us in the chapter entitled "The Breakdown of Natural Realism." But this developed contrast between two spheres of existence is the condition of the puzzling problem of theory of knowledge, How can the individual possess knowledge about a realm outside of consciousness if he is confined to consciousness?

The False vs. the Correct Form of this Question.—This question is so primary that we must be certain that we have stated it correctly and have conceived the two realms from the proper standpoint. As we shall see, it makes all the difference in the world for our conception of knowledge what setting we start from.

Theory of knowledge has usually started from a false statement of the question, somewhat as follows: How can we have knowledge of extra-mental things if we can apprehend only objects (ideas) in consciousness? When we examine this form carefully, we note that the word thing is used for the extra-mental reality. *But this term suggests to the mind something to be apprehended which yet cannot be apprehended.* In other words, the setting of the term is that of Natural Realism. But for us now, this is only another way of saying that the natural structure of the coexistential dimension of the individual's field of experience leads us to think of knowledge as an apprehension of objects. Hence, the breakdown of Natural Realism led thinkers like Locke to substitute the copy-theory of knowl-

edge. The objects we apprehend are ideas but such objects must be *like* extra-mental realities if they are to be proper representatives of them and so give us knowledge of them. The important point to bear in mind is that knowledge is conceived as an *indirect* apprehension through likeness. Since we cannot apprehend these extra-mental realities, the best we can do is to apprehend ideas which are like them, and, so far as they are like them, these ideas give us knowledge of them. Hence, we called Locke's position selective representative realism. Ideas are like things as regards certain features, the primary qualities. Is it not obvious that this whole tendency, which has been so imperative in past philosophy, is based on a view of knowledge which reflects the structure of the field of experience. *In other words, Natural Realism and the copy-theory which grows from it are natural illusions. That is why they die so hard.* What we must try to do is to get back of these illusions and explain them in the light of reflection.

But if we give up the tendency to suppose that we apprehend things and begin with the scientist's use of perception as an occasion for the attainment of fact, we soon realize that facts are judgments and not objects apprehended. Upon the basis of these facts, systems of knowledge are achieved which are referred to an extra-mental reality as containing knowledge about it. This way of approach does away with the habits and outlook built up around the *perceptual constructs* which are given in the field of experience; and when it is carefully carried through by logic, the tendency to think of knowledge as a direct or indirect apprehension is thwarted. Why is this? A little reflection shows that it is because the setting of common-sense realism is essentially disregarded.

The correct form of the question is, then, as follows: *How can we have knowledge of an extra-mental realm if the propositions which contain this knowledge exist only in consciousness?* As soon as this correct form is given, it is realized that there is really no problem. Where else should knowledge exist? But such propositions, while they are understood and so are objects to which we attend, are not like the perceptual constructs toward which we adopt a realistic attitude at the level of common sense. We do not think of these propositions as things. We may put this argument in a more technical form by saying that the category of thinghood is not applied to propositions.

Let us note further differences in the logical situation. Perception is now a means to knowledge, whereas in the false setting perception is the presence of a thing known. But if perception is merely a means to knowledge, the propositions which are knowledge cannot be referred to percepts which are present in experience or to things like them outside of experience. In other words, there is no motive to a copy-theory of knowledge. Knowledge is genuine knowledge and nothing else. In science, then, we achieve knowledge of a realm distinct from consciousness and this knowledge must not be thought of as an attempt to copy this realm. Knowledge is not reducible to likeness between constructs in experience and things outside of experience. The setting of genuine knowledge must be fundamentally distinguished from that which grows up around Natural Realism. The ideas of which Locke, Berkeley and Hume speak are mental objects having the setting of Natural Realism. That is why they put the question wrongly and Hume drew the proper *reductio ad absurdum* of skepticism. The ideas of the British empiricists are images, not propositions.

Is the Distinction Between Consciousness and a Realm Outside Justifiable?—Many philosophers who have wished to avoid skepticism and have not seen the solution just advanced have sought to escape the difficulty which Hume so frankly acknowledged by denying the necessity for the distinction between consciousness (the field of the individual's experience) and a realm independent of it. But this distinction is not founded upon the illusory side of Natural Realism; instead, it is founded upon those very facts which help to break it down. Since we have already devoted a chapter to these facts, it is unnecessary to reëxamine them here. I can see, then, no necessity to deny this fundamental distinction between the individual's consciousness and a realm outside of, yet conditioning, it. What is necessary is the relinquishment of any concept of this extra-mental realm which reflects Natural Realism. Let us hold to the facts and follow their lead doggedly.

Analysis of the Term Extra-Mental.—The philosopher has to be on his guard against all sorts of insidious implications in his terms. It will be remembered that we insisted that the British philosophers were right in their acceptance of mental pluralism and that Kant made a vicious mistake when he constructed a logical self of a universal character. We must not forget this conclusion when interpreting the contrast between the knower's consciousness and the extra-mental realm. What each individual who reflects asserts is, that there is such a transsubjective realm outside of his own mind as a realm of percepts, judgments, and feelings. But what should we mean by this metaphorical term 'outside'? The reasons which sustain the contrast should give us the necessary clue.

The facts which lead to the breakdown of Natural Real-

ism indicate that percepts are not actually physical things as we, at first, suppose them to be. Now I judge that the term extra-mental signifies just this, the denial that any element in the field of the individual's experience is identical with any part of this other realm. Along with this view goes a gradual development of different meanings for these two realms. The fundamental concepts for the physical realm are developed already, in an inadequate form, by common sense and this development is continued by the physical sciences. The same is true for consciousness; only here the deepening of the concepts applicable to the mental is the work of the mental sciences, especially psychology.

It will be necessary to examine these contrasted groups of concepts more fully when we come to the mind-body problem. At present, the main point to be noted is that, for theory of knowledge, extra-mental has two meanings, first, not identical with any element in *my* consciousness, second, non-mental in the sense that the concepts applicable to consciousness are not applicable to this other realm which conditions what appears in consciousness. But *non-mental* must not be construed into *anti-mental*, the position that this physical realm is alien to, and excludes, consciousness. In a later chapter we shall treat of this distinction between the non-mental and the anti-mental much more fully. The setting of human knowledge will become clearer with the solution of the mind-body problem. We shall see that the 'knower' is an organism immersed in, and continuous with, the physical world.

A Definition of Critical Realism.—The position at which we have arrived belongs to the general class called critical realism, although it is a unique species of that class. It is opposed to Natural Realism, on the one hand,

and to idealism and skepticism, on the other. While Natural Realism holds that we apprehend the physical world, itself, in perception, critical realisms as a class deny this. In opposition to idealism, critical realism asserts that there is a physical realm independent of consciousness, while, in contrast to skepticism, it asserts that we can have genuine knowledge about such a physical, non-mental realm.

But the form of critical realism which we have been developing is constructed around a view of knowledge which differentiates it sharply from other forms of realism. Knowledge of this non-mental, physical realm is neither direct nor indirect apprehension Instead, it consists of propositions built up by the human mind according to logical methods and held to contain knowledge of this physical realm. Locke's position is a form of critical realism but it is constructed around the assumption that knowledge of the physical realm is an indirect apprehension. The position championed in this book may be called a non-apprehensional critical realism. The traditional critical realism, on the other hand, has been opposed to naïve realism but has been built up around an impossible view of scientific knowledge.

Theory of Knowledge Needs Logic.—The charge that modern philosophy has based itself too exclusively on psychology to the disregard of logic is justified with reference to representative realism. While logic must not conflict with psychology, the standpoints of the two sciences are different. Of the two, logic has the more natural outlook, psychology the more artificial. If we want to know what knowledge is, it will be wiser to go to modern logic. We shall not, then, try to reduce facts to sensations nor judgments to images. By approaching knowledge from

the side of logic with its stress upon judgments and propositions as the ultimate units of cognition, we shall the more easily escape the lure of Natural Realism and of its first cousin, representative realism. It is not too much to say that the failure of British empiricism to solve the problem of knowledge was due to lack of recognition given to judgment. In the following chapter, we shall proceed to study our actual knowledge in the light of logic.

References

Dewey, *How We Think*, chap. 8.
Hobhouse, *Theory of Knowledge*, chap. 11.
Marvin, *A First Book in Metaphysics*, chap. 3.
Mill, *Logic*, bk. 3, chap. 7.
Sellars, *Essentials of Logic*, chaps. 7 and 17.

CHAPTER XI

THE REFERENCE OF KNOWLEDGE

Knowledge Involves Judgment.—When we ask ourselves what we mean by the term, knowledge, we soon find it implies the capacity to pass judgments. "When I say of a certain person, 'I know him, he is an acquaintance of mine,' it means the same as: 'I can give you the name of the man who is approaching yonder, I know many things concerning him, know his business, his vocation, and perhaps also remember having had this or that experience with him.' To say that I know a plant, means: I am in position to define the plant botanically, to give its name, and that I know the place to which scientific investigation has assigned it in the classification of plants." Jerusalem, *An Introduction to Philosophy*, p. 62. But investigation has shown that even our percepts involve a vast amount of interpretation and construction. The psychologist informs us that what we "see" is a *function* of sense-stimulus and past experience. Somehow the mind works to the formation of that which appears in the field of experience. The deeper experience is, the more meaning and content is there in what is perceived. As we pointed out in the preceding chapter, all of the added knowledge attaches itself to the colored, tangible, spatial object in the field and penetrates it.

The more the interpretative extension of the percept, the greater is the possibility of error and the more are we aware that we are passing a judgment. "Take the affirma-

tion, 'That is a cab,' assuming it to be made from merely hearing a sound. In this we can much more nearly separate the datum or minimum of sense from our enlargement or interpretation of it, and we know that our interpretation is liable to be wrong; that is to say, *the reality into which we ought to construe the sound* may be some other kind of vehicle, and not a cab. Now compare this with the affirmation, 'That (which I see) is a cab.' This judgment of sight-perception, though its terms are more inextricably interwoven, has just the same elements in it as the judgment of sound-perception, 'That (which I hear) is a cab.' In the sound-perception the structure is quite plain. A particular complex quality in the sound suggests as its objective explanation, what is perfectly distinguishable from it in thought, the movement of a cab on a particular kind of pavement. The quality of the sound, its roughness, loudness, increase and decrease, all form points of connection with the sound of a cab as we know it, and with the speed, weight, etc., of such a vehicle. But it is quite easy to consider the sound in itself apart from its interpretation, and we sometimes feel the interpretation to be more immediate, and sometimes more inferential. We sometimes say, 'I hear a cab,' just as we say, 'I see one,' but in case of sound we more often perhaps say, 'That sounds like—' such and such a thing, which indicates a doubt, and the beginning of conscious inference." Bosanquet, *The Essentials of Logic*, pp. 31–2. Thus there are different levels in this mental construction of the world we apprehend and recognize and gain knowledge about. When we are led to stress the process of its attainment, we point out the continuous interpretation which is going on in our minds. When we are in a less philosophic mood, we take this achieved world as something for granted,

something existent apart from our minds. In other words, we ordinarily live in the attitude of Natural Realism. The field of experience has a structure, and specific problems of interpretation arise within and pre-suppose that structure. As I understand it, it is the realm of things and relations taken for granted and not now under fire which is what Bosanquet calls "the reality into which we ought to construe the sound." Does this world of things, continuous with the house in which I am, contain a cab just outside my window on the street, or some other vehicle?

Thus particular judgments have a setting which has gradually grown up, and this setting is realistic. The technical way of putting this situation is somewhat as follows: "Every cognition is therefore an intellectual apprehension of a given content, which is itself distinct from the cognition. Every cognition, furthermore, is consummated in the form of a judgment, and whoever pronounces this judgment, in the firm conviction of having attained a cognition, is thereby convinced at the same time that the cognized object, or the cognized event really exists and is really constituted just as it appears to be, independently of the fact whether it is cognized or not." Jerusalem, *Ibid.*, p. 62. Another way of expressing this characteristic and setting of judgment is as follows: "Every judgment then affirms something to be real, and therefore reality to be defined, in part, by that something." Bosanquet, *Ibid.*, p. 32.

Judgment Defined.—There are many definitions of judgment, varying slightly in their form or their emphases. Two aspects of every judgment, however, stand out very clearly. There is, first, the complex content which is held before the mind, and, second, the attitude of belief or acceptance taken toward it. Let us examine these two

aspects of every judgment in the light of the realistic setting in which it arises. When I say, "That was a street-car," I find that I have in mind the perceivable world as a background and am concerned with the interpretation of a sound which I hear as somehow caused by a part of that world. The thing which caused that sound was a street-car, and a street-car is a particular known thing in this physical world I perceive. Is it not obvious that the setting of such a perceptual judgment is that of Natural Realism? I simply think of this physical world as having contained a street-car, a familiar enough thing, in a certain causal relation to myself. Thus the content of my judgment shades off into an accepted world as soon as it is asserted. Judgment does not break with the distinctions characteristic of consciousness as brought out by descriptive empiricism but implies them and helps to develop them.

Logic Takes both Knowledge and Reality for Granted.—When we come to examine the statements of logicians, we soon realize that logic takes both knowledge and reality for granted. It rightly seems foolishness to the logician for anyone to deny the fact of knowledge, and what can knowledge be but knowledge of what is real? Do not all of us pass judgments about recognized realms of existence? And are not all of these realms of existence recognized by the mind to be real and independent of the act of judgment? And in a very real sense, of course, the logician is right in his attitude. But we have advanced far enough in theory of knowledge now to realize that the reference and nature of knowledge is a problem which requires reflections and investigations of a peculiar sort.

Every proposition has two distinguishable elements, the logical subject and the logical predicate respectively.

"That is a street-car," when analyzed, becomes "The sound I hear is caused by a street-car, a certain kind of thing in the physical world," or, more naïvely, "That sounding thing is a street-car." Let us take the more naïve form for analysis. "That sounding thing" is the logical subject, while "a street-car" is the logical predicate. It is evident that my judgment involves the acceptance of the sound I hear as a sign of a thing in the accepted physical world which is, at this level, perceivable; and that I then go on to identify this thing with the class of things called street-cars. The setting of this judgment is obviously that of Natural Realism. I regard sounding things and street-cars as realities which I can perceive. In such knowledge and in such judgments there is no consciousness of an epistemological problem. Epistemological problems arise only as the result of reflection upon difficulties confronting Natural Realism. The logician as such is not an epistemologist, and he makes a fundamental mistake when he assumes that an analysis of the form of judgments will settle epistemological problems.[1]

The Reference of Judgment.—We have seen that the setting for judgment is usually that of Natural Realism. I cognize, and pass judgment about, perceivable objects. I can perceive that part of this admitted realm which is spatially near me; the rest of this realm is thought of as continuous with the part under my observation and the same as it would be were I able to perceive it all. When, therefore, I make a judgment about any thing which is not under my eye, I assign it to this realm and then locate it by means of a system of measurement and direction.

[1] It is interesting to note that such apparently diverse thinkers as Dewey, the American pragmatist, and Bosanquet, the Neo-Hegelian, make this mistake in common.

In this way I *identify* the object. "The Capitol *at Washington*," "The building *at the end of the street on the south side*," are simple examples of this identification of the object meant by its location. After I have thus identified the logical subject in this fashion, I go on to make the desired statement about it in the predicate. When the judgment has once been made, I cognize the object henceforth in accordance with the predicate. The Capitol *is* in front of the Congressional Library, *is* surmounted by a dome, etc. Such cognition is an intellectual apprehension of an object. The structure of consciousness is, so far as I can make out, not essentially different from what it is in perception. I *conceive* an object in much the same way that I *perceive* it. Yet the content differs in the two cases and, in conception, I know that the object is not perceptually present.

But we now realize that the physical world cannot be apprehended either perceptually or conceptually. We must use our words very carefully now. These objects which we perceive and conceive and which are organizations of judgments are mental. We apprehend a mental system permeated by meanings such as independence and permanence, and developed and sustained by the energy of our own minds. At the conceptual level, no less than at the perceptual level, the structure of consciousness induces Natural Realism and Natural Realism reflects the structure of consciousness, what we have called its coexistential dimension. The distinction between the knower and the known is basic for the human consciousness. In judgment at this naïve level, we can distinguish three elements, the more inclusive system of objects, the logical subject, and the logical predicate. In the judgment, "This book is red," I can distinguish, first of all,

the setting, or universe of discourse, to which I assign the book. It is a physical thing and a part of the physical realm. Then comes the particular logical subject, this book. Finally, there is the predicate which qualifies the logical subject. We realize now that all three of these elements, because experienced, are mental and that we have been occupying the standpoint of Natural Realism.

Reference for Critical Realism.—At the reflective epistemological level at which we have arrived, three elements must again be distinguished. The setting, or realm of existence, now considered outside the field of experience and non-apprehensible, is the physical world. This real, non-mental order is not sustained by the energy of our thinking and is genuinely independent of our knowledge. It is an *acknowledged realm*, founded on a necessary distinction in consciousness. We may call this acknowledged realm the *reference* of judgments at the level of critical realism. The logical subject of the judgment is the second element to be distinguished, while the logical predicate is the third. "This book is red" becomes "This part of the physical world controls in me the sensation red." The realm of existence is the acknowledged physical world; the logical subject is the identification of the part of this realm of which the assertion is made; while the predicate is what is asserted of the identified part of the acknowledged realm. We may analyze a judgment at this level as follows: The physical world (reality) at the point X (located by an axis of reference or by pointing) is *known in terms of the predicate, or predicates, Y*. The physical world is the reference, or metaphysical subject, of the proposition; the locating of the particular part of this acknowledged realm is the subject-matter and purpose of

the logical subject and is given in terms of a socially accepted method of identification and demarking; while the particular assertion made about the selected part of the acknowledged realm is the predicate. Thus a critical judgment, such as those made in science, is a proposition referred to reality as being knowledge about it. The propositions exist only in consciousness, but they contain what we are certain is knowledge about this acknowledged realm; or, put in a different way, what we refer to reality is what we mean by knowledge.

Is Reality Present to Thought?—Let us call this acknowledged realm to which critical judgments are referred reality. By definition, it is distinct from the consciousness of the knower yet in the same world with this consciousness.

The problem before us now is one of analysis and definition. Is this reality present to the consciousness which claims to possess knowledge of it in the critical propositions affirmed? Obviously enough, the question is one of definition. If we regard knowledge as the presence of the reality to the mind, then reality is present to the mind which has knowledge of it in accepted propositions. If, on the other hand, we fear that mankind is prone to an apprehensional view of knowledge which makes the realm known literally an object of inspection, we will deny that reality is present to thought in knowledge. What we must hold firmly to is that reality is known, that we achieve propositions which are referred to an acknowledged realm as containing knowledge of that realm. Since knowledge is a human affair, this reference of actual propositions, which is the meaning of knowledge, cannot be denied. That we have knowledge of reality cannot be doubted; what knowledge is and in what sense it reveals reality is a sub-

ject for human investigation since it is entirely unique and we are the sole possessors.

Is Each Individual Confined to his Consciousness?— As a result of the bewilderment which followed the breakdown of both Natural and representative realism, it has become customary for philosophers to assert that it is a mistake to teach that the individual is confined to his own consciousness. Hume's skepticism, it is maintained, was due to this assumption. This indictment has often been interpreted as meaning that the individual knows only his own states of consciousness. But we must be certain that there is no misunderstanding here. The expression, states of consciousness, is more a psychological than a philosophical one. In other words, Hume taught that all objects known are objects which are present in the consciousness of the individual. These objects he called perceptions. But Hume could not satisfy himself that these given objects mediated knowledge of an external realm. Why? Because he was disillusioned with regard to representative realism and could think of no other meaning for knowledge than the similarity of ideas to reality.

Is it not evident that Hume's skepticism and the bewilderment which has overtaken philosophy is not the result of his mental pluralism but of this inability to solve the problem of knowledge? And this inability was due, not to his lack of ability, but to the undeveloped state of logic and psychology and to the absence of a faithful study of the distinctions and structure characteristic of human consciousness. Kant advanced farther than Hume and introduced into philosophy the study of the structure of experience. But Kant made several sorry blunders which threw him off the track and was weak enough to resort to the illogical compromise which substitutes for

mental pluralism a consciousness-in-general, an Experience with a capital E.

The present study of the reference of knowledge enables us to answer the puzzle contained in the statement that each individual is confined to his own consciousness. The answer is, obviously, yes and no. He is confined to his own consciousness in the sense that no realities except elements of his consciousness can be present in his consciousness. All the parts of his field of experience are mental. But he is not confined to his consciousness if this assertion is intended to deny that he possesses knowledge of what is outside his consciousness. Such propositions as are accepted by him as containing knowledge of an independent realm are, of course, in his consciousness. The individual's consciousness has a structure and possesses distinctions which make it capable of this realistic reference.

Being Distinct from Knowledge.—The acknowledged realm is, by its very meaning, distinct from the knowledge possessed by human minds and referred to it as a reference. Reality is one thing and knowledge is another and, so far as we are concerned, a purely human affair. I can gather together all the knowledge about this table as a part of the physical world which I can glean from physics, chemistry and botany, but this systematic knowledge is not the table. Knowledge arises only when the physical world controls perceptions in minds and when these minds have the capacity to build up propositions. When we say that being is distinct from knowledge, we mean that the reality which is referred to and acknowledged is not the knowledge which is referred to it, that the metaphysical subject is separate from the logical subject and the logical predicate.

There is no agnosticism in this position, for the genuine-

ness of knowledge and its empirical presence are not impugned. Of course, the reality known is not compresent with the knowledge in the mind which has the knowledge and is not in any sense apprehensible; but only he who does not understand the real nature of knowledge about the physical world can be disappointed at this and regard it as a shortcoming. Only he will speak of the present position as at all agnostic who is still dominated by the illusion nourished by Natural Realism. I mean that only he who thinks that reality must be apprehended directly or by proxy will feel disappointed in the knowledge which we actually have.

We Want to Be the Reality Known.—When we come to analyze our own tendencies, we soon realize that we have the desire of penetrating into the things we perceive and leading, temporarily at least, their own life. We want to *be* the things in order to comprehend them more fully. We regard them as centres of activity which we might somehow share and comprehend. The ideal of knowledge becomes for us a haunting sense of possible identity with the things. Our nature strains after a sympathy with them, a fellow-feeling. To know the thing adequately seems to us to involve being the thing at the same time that we are ourselves. Surely we argue somewhat as follows: "This reality I perceive is independent of me and must therefore have a life of its own just as I have mine. I feel pleasure and pain, joy and stress; I plan and will; I dream and think. But this other thing is real also. Therefore, something like this conscious life of mine must be in it." This independent life which is not ours attracts us and awakens in us the desire to penetrate to it if possible. But we know that such penetration could be achieved only by being it, by living its life for a time at least and then

remembering it when we became ourselves again. The ideal knowledge seems to us to consist in this penetrative sympathy. What shall we say of this tendency in us? Is it an illusion?

I do not think that this tendency to penetrate into the realities we acknowledge around us is irrational. I would say that it is a desire which naturally accompanies our recognition that we are not alone in the world. It is the tragic and necessary implication of our own individuality in a world which contains other individuals. Could we *be* other things, individuality would have no existence and there would not be other things to acknowledge and to brood over. But since we cannot be other things, our individuality sets limits which tantalize us. While we are ourselves in a living, conscious way, we know that other realities have a comparable existence which excludes ours in the same way that ours excludes theirs. Such is the world.

Knowledge our only Escape from Individuality.—The human consciousness is such that it contains the subject-object duality. The things we *perceive* are given an objectivity in this way, and we proceed further to read into them something of the nature of our own mind and will. This tendency is called *animism* and is now known to be universal among primitive peoples. Thus a dramatic sense of sympathy with other realities is established by reading into them unconsciously our idea of their life. But reflection has finally discovered the illusory nature of this sense of penetration. It is known to be a process within the individual's own consciousness which masquerades as a penetration into another's. The student can easily see that such animism with its sympathy, or *Einfühlung*, is parallel with Natural Realism. They rise and fall together.

But granted that we cannot penetrate into the realities which surround us, it still remains true that we can acquire knowledge about them. This critical knowledge, which critical realism admits, is in a way an escape from the isolation of individuality. It is, however, an escape which does not conflict with human individuality, for we are conscious organisms upon which the rest of the world plays and which are able to achieve knowledge referable to this world. Were not knowledge unique, we could use metaphors and speak of it as the echo of the world in our minds or its interpretation in the language of consciousness. But it is better to avoid metaphors and to remember that we know reality, yet necessarily know it in terms of our human experience. We cannot *be* other realities, nor can we penetrate into them by intuition, but we can have knowledge about them. Yet we need not deny that the realities about which we gain knowledge are far more than that knowledge reveals just as we, ourselves, are more than the dry propositions in terms of which some mere acquaintance would portray us. A critical knowledge comes to know its own limitations.

References

Bergson, *Introduction to Metaphysics.*
Bosanquet, *Essentials of Logic*, lecture 2.
Fletcher, *Introduction to Philosophy*, chap. 17.
Jerusalem, *Introduction to Philosophy*, third division.
Taylor, *Elements of Metaphysics*, bk. 2, chap. 1.

CHAPTER XII

TRADITIONAL ASSUMPTIONS AND ATTITUDES

Important Distinctions.—Thus far we have pursued the policy of actual investigation into the concrete problems of epistemology. Beginning with the standpoint of common sense, we have seen how reflection on the facts of experience forces the thinker to pass beyond it to a far more critical position. Aided by the successful analysis, as well as by the mistakes, of past thinkers, such as Locke, Berkeley, Hume and Kant, we have gradually worked out a more adequate standpoint which apparently does justice to the characteristic distinctions within experience and to the claim of knowledge. But, in carrying out this investigation, we have paid comparatively little attention to certain historical distinctions and contrasts which meet the student on every hand when he does serious reading in philosophy. Having made sure of a good foundation, we can now examine and evaluate these traditional terms.

Before modern logic and psychology had reached their present level of development, assumptions in regard to the *origin of knowledge* played a large part in philosophical discussion. In other words, philosophy had no assured foundation on which to build. Epistemology, logic and psychology were all commingled in the most tantalizing way and no one of these disciplines had reached a maturity sufficient to aid the others in establishing themselves. Consequently, problems were raised which we now see to be false because based on false assumptions. We shall

examine these problems and then go on to show how they have been outgrown.

The traditional assumptions in regard to what is called the origin of knowledge fall into three groups, *rationalism*, *sensationalism* and *apriorism*. The first two of these terms indicate a sharp contrast, while the third represents an attempt at a compromise between them.

Rationalism.—Rationalism may be defined as the doctrine that reason, a supposedly innate faculty, is the source of all true knowledge and, more especially, the sole foundation and warrant of all universal and necessary knowledge.

Rationalism arose in Greek philosophy as a result of the discovery that perception contains illusions. Since there was no adequate psychology of perception, the Greeks did not realize the part played by both physical conditions and judgment in perception and leaped hastily to a sharp opposition between sense and reason. Sense deals with the changing and the illusory, while reason apprehends the permanent and the real. On the whole, Plato was a rationalist, for he put into sharp opposition the realm of ideas and the realm of sensory appearances. The Platonic ideas are changeless entities which can be apprehended only by the eye of the mind, which is reason. Coming down to modern philosophy, we find that practically all the thinkers of the continent were rationalists, while the British philosophers were predominantly sensationalists, or, at least, anti-rationalists. Descartes' philosophy is a very good example of rationalism. He appeals to what he calls "the natural light" for the fundamental principles which he is inclined to accept. After he has obtained these principles, he proceeds *more geometrico* to deduce his conclusions.

When we come to examine rationalism historically and from the vantage-point of modern logic and psychology, we soon see that it was based on motives which accidentally supplemented one another. There can be little doubt that the dualism between the soul and the body had something to do with its development. Reason is the immortal part which is more or less polluted by contact with the body. Sense is the faculty for the things of time and of this world, and reason is the faculty for things eternal and the world beyond. Another motive was the apparent independence of sensation which mathematics possesses. Plato was an admirer of geometry and so was Descartes. The clarity and deductive necessity of its conclusions made it the ideal for knowledge. The influence of mathematics was heightened by the spread of the Copernican theory. This theory again brought to the front the contrast between perception and reason, and this contrast was once more translated into a fixed opposition between two sources of knowledge. But these two positive motives for rationalism were aided and abetted by an inadequate logic which did not appreciate that reason is only an abstraction for concrete reasoning and did not understand that all human concepts grow out of the level of perception. These early thinkers had no sense for genetic relations and put faculties where we would now put processes.

It is well to bear in mind that rationalism has been of all shades and degrees. Some thinkers have been rationalists only in regard to this point or that, and have admitted that nearly all actual human knowledge is founded upon observation. But wherever there is a tendency to seek a source for knowledge in a faculty logically separable from the concreter type of experience, we may speak of rationalism. The old-time rationalism has almost ceased to

exist, but there are tantalizing suggestions of something akin to it in the writings of many contemporary philosophers, especially of those for whom mathematics is the ideal science.

Sensationalism.—We may define sensationalism as the doctrine that all knowledge consists of sensations or of thoughts reducible to sensations. Hume's position is a typical example of sensationalism. In the second section of the *Enquiry*, he discusses the origin of ideas. But he does not assign ideas to a faculty as the rationalist does the ideas of reason. Instead, he commences with an empirical description of the consciousness of each individual and points out that we are able to distinguish between sensations (impressions) and their revivals. "Here therefore we may divide all the perceptions of the mind into two classes or species, which are distinguished by their different degrees of force and vivacity. The less forcible and lively are commonly denominated Thoughts or Ideas." It is obvious that Hume's doctrine is psychological rather than epistemological. The question we must ask ourselves is this, Are the propositions which contain our knowledge analyzable into images which are in their turn only revivals of sensations? If the psychologists agree that this is the case, the philosopher is unlikely to say them nay. However, psychology has, as a matter of fact, given up sensationalism. The doctrine does not seem to do justice to human experience.

Sensationalism has often been given an epistemological setting comparable to that which characterizes rationalism. It is then asserted that sense is a faculty of the mind, and that from the material thus obtained all the more complicated ideas and judgments are somehow developed.

What shall we say of sensationalism? The first criticism

must be directed against the use of the word faculty. The senses are sense-organs which are stimulated. That the stimulation of sense-organs is one of the conditions of our having the sort of experience we have cannot be denied. But we have good reason to believe that there are other conditions. The brain is tremendously important. Besides, a condition of experience must not be identified with a source of knowledge. Knowledge cannot be traced to certain specific fountains whence it wells up. It is an achievement within consciousness. We may say, then, that sensationalism reflects the false outlook of rationalism in its search for a mechanical entry for knowledge. Historically, its significance was its denial of a rational faculty. It combated rationalism until psychology and logic attained adulthood.

Apriorism.—Apriorism is an attempt to reconcile rationalism and sensationalism. Kant's position is typical of what is technically called apriorism. It will be remembered that Kant seeks to account for the knowledge we do actually have by regarding it as a resultant of the application of certain innate mental forms called space and time and the categories to the material contributed by sense. The mind is for Kant a *locus* in which certain operations occur and produce human experience as it actually is. In other words, Kant endeavors to explain experience as a manufactured product analyzable into matter contributed by the senses and formal matter contributed by the mind. This formal matter is applied to the material given by sense by an act of synthesis referable to a Transcendental Ego.

Kant hoped to achieve in this way all that rationalism had claimed. He speaks of *a priori* knowledge and contrasts it with *a posteriori* knowledge.

But the logic of to-day is not aware of any such distinction. Knowledge is valid or invalid. A proposition is only general or it is universal. A principle is a fundamental postulate or it is a tested generalization. Thus Kant's machinery is of no significance to logic and cannot be tested by logic. Hence apriorism is an attempt to reconcile rationalism and sensationalism by one who has neither an adequate psychology nor an adequate logic. Its value must, therefore, be regarded as mainly historical. What it did accomplish was the widespread admission that both rationalism and sensationalism were quite inadequate. "As a matter of fact, the whole question of the sources of knowledge is not epistemological but psychological, and must be approached by psychological methods. The psychologist is interested to discover from what processes an universal proposition has developed, what part of it has been contributed by sense-perception and what by thought or imagination, etc., etc. . . . Really, therefore, rationalism, empiricism and criticism, although tradition allows them the right of citizenship in the realm of epistemology, represent psychological theories or standpoints, and should be banished from the company of epistemological schools." Külpe, *Introduction to Philosophy*, pp. 185–6. And it is well known that modern psychology does not accept faculties and synthetic egos.

Empiricism.—Another term very widely used is empiricism. Historically, the term is associated with Locke's attack upon rationalism. Locke denied that there are innate ideas and asserted that all the ideas we possess arise naturally within experience. "Our observation, employed either about external sensible objects, or about the internal operations of our minds, perceived and reflected upon by ourselves, is that which supplies our under-

standings with all the material of (reflective) thinking. These two are the fountains of knowledge, from whence all the ideas we have, or can naturally have, do spring." *Essay*, book 11, chap. 1. sec. 2. Locke's position has been much misunderstood. It is neither sensationalism nor rationalism. "He did not deny the truth or the self-evidence of these (logical) principles, and he even thought them useful as a means of avoiding sophistry in controversy. Still less did he maintain that the mind itself though a white paper to the world of objects was itself a passive instrument." Alexander, *Locke*, p. 56.

When the term empiricism is used, we must always ask ourselves what is meant by it, how is experience conceived. To define empiricism as a doctrine which tests every bit of knowledge by an appeal to experience reveals the vagueness of the term. The tests of propositions are to be found in the methods used in the various fields. To say that we prove that all men are mortal by experience does not inform us as to the nature of the proof used and accepted by logic. We may say, then, that the term empiricism, like its contrast-term rationalism, is of little significance today. These standpoints have been outgrown. Epistemology must be founded on an adequate logic and psychology.

Attitudes Toward Knowledge.—Looking over the history of philosophy, we find certain recurrent attitudes toward knowledge. Chief of these are dogmatism, skepticism, and criticism. We shall, first of all, point out how these terms have been used and then discuss their present status.

Dogmatism is a term taken over from general experience, especially from the field of religion, and given currency in philosophy by Kant. We call a man a dogmatist

who makes assertions without giving the grounds for them and without attempting to meet reasonable doubts. Thus a man who affirms his beliefs very positively and will not listen to objections and contradictory facts is a dogmatist. From this general application to an uncritical and stubbornly affirmative frame of mind, the term has been extended to the construction of philosophical systems without a sufficient preliminary examination of the assumptions used. Uncontrolled speculation which flouts, or makes little use of, evidence results in systems which deserve the adjective dogmatic. Of course, philosophers are not the only offenders. The various sciences have often discovered in the course of further investigation that they have been making assumptions of a false or inadequate character. We may say that all the sciences grow more critical as they grow older. Dogmatism is the sign of youth and of its accompanying lack of realization of the complexity of problems. Philosophy has always stressed its own history and has therefore become increasingly aware of the arbitrariness and naïvité of many of the assumptions of past systems. But we must confess that the term dogmatism is quite a relative term. Compared with the systems of to-day past systems were more dogmatic and less critical. The systems of Descartes, Spinoza and Wolf are examples of what we would to-day consider quite dogmatic constructions.

Criticism is also a term made current by Kant. He pointed out the defects of both dogmatism and extreme skepticism and advocated a thorough investigation of the nature and conditions of knowledge as a preliminary to any serious work of construction in philosophy. His advance upon his predecessors was, however, relative. No true philosopher has ever been a complete dogmatist.

If we take his term from another angle as an advocacy of theory of knowledge as a preliminary to metaphysics, we must point out that John Locke stressed the need of a critical investigation into the nature of human knowledge. From the time of Protagoras, at least, no system has been without its epistemological setting. In the adoption of the adjective for his own philosophy, Kant was passing himself a not altogether warranted compliment. The systems of Locke and Hume are decidedly critical. The logic of philosophical investigation is, so far as I can see, the same as for any investigation. There is no peculiar and royal road to philosophy. Historically, then, criticism must stand for a growing stress upon the value of theory of knowledge for general philosophy.

Both dogmatism and criticism take the existence of knowledge for granted. If we take these terms in the logical sense, they stand simply for degress of criticalness. He who carefully investigates his assumptions is critical; he who tends to take them for granted is dogmatic. This difference of attitude is to be found in all the sciences and is not peculiar to philosophy. Taken in its more technical sense, this contrast between dogmatism and criticism has stood for a recognition of the fundamental importance of theory of knowledge for philosophy.

Skepticism is likewise an ambiguous term. We may distinguish skepticism as the recognition of the value of an ingredient of doubt in all investigation from *philosophical skepticism*. The first meaning is essentially identical with the logical sense of criticism. Philosophical skepticism, on the contrary, is a technical philosophical expression. While both dogmatism and criticism assume the existence of knowledge, philosophical skepticism is a general doubt of its possibility.

But philosophical skepticism has had various forms, relative to the positions opposed and the problems confronting reflection. Greek skepticism was directed mainly against the belief that perception gives us an intuition of an independent, stable reality. In other words, it was developed in opposition to naïve realism. Later, it attacked dogmatic rationalism. The skeptic is a member of an opposition party. Pyrrho of Elis (circa 300 B. C.), Arcesilaus of Pitane, a leader of the Platonic Academy, Carneades, and Sextus Empiricus are a few of the thinkers who stand out in the history of Greek skepticism. The main function of all of these thinkers was to attack dogmatic positions and to raise questions. In modern times, Hume is usually singled out as the chief exponent of skepticism. But his skepticism was relative to dogmatic rationalism. Otherwise, it reflected the bewilderment in which theory of knowledge was.

Philosophical skeptics did not, however, always content themselves with attacks upon unwarranted assumptions. They sometimes allowed themselves to declare that man cannot have knowledge. But it is obvious that such an assertion involves a self-contradiction. We cannot assert that we cannot make assertions (knowledge) without contradicting ourselves. In its absolute form, skepticism is self-destructive. Thus reflection shows that we have a justified right to criticise particular theories, scientific or philosophical, but that we cannot assert that knowledge of some kind is impossible. Skepticism as a working method is one thing, and absolute philosophical skepticism is quite another. The same thinker has often attempted to combine the two, but they are really distinct.

References

Calkins, *The Persistent Problems of Philosophy*, chap. 6.
Jerusalem, *Introduction to Philosophy*, third division.
Külpe, *Introduction to Philosophy*, secs. 24–5–6.
Russell, *The Problems of Philosophy*, chaps. 7 and 8.
Fullerton, *Introduction to Philosophy*, chap. 15.

CHAPTER XIII

EPISTEMOLOGICAL THEORIES

The Value of an Epistemological Summary.—Epistemological positions have little meaning for a person until he has some knowledge of epistemological problems. What meaning can idealism have to one who has no knowledge of the history of philosophy and no acquaintance with the problems raised by reflection? To a beginner it would seem the veriest nonsense to assert that the physical world is his idea. Does he not see the firm and stable world about him, and does he not know from sad experience how brutally real it is? But the student who has carefully followed the steps of the preceding argument and has done some genuine thinking for himself is now ready to compare the main epistemological positions held by past and contemporary philosophers.

Such a summary has the value which system always has. It helps to define positions by contrast, and it enables one to run over the various possibilities quickly and to see them in relation to one another and the problems which they must satisfy.

The Nature of Epistemology.—It is so easy to misunderstand the nature of epistemology that it is best to be certain what, exactly, its task is. Epistemology has nothing to do with the content of the particular sciences nor can it dictate the proper assumptions which these sciences ought to make. It is a discipline along with the other disciplines and presupposes the fact of knowledge. It is a

reflective science which develops within an already complex experience and seeks to answer certain definite questions about knowledge in the light of the knowledge already gained by the physical and the mental sciences. It is not logically prior to the other sciences, but, like philosophy as a whole, is a reflective examination of their results in the attempt to answer specific questions about the *nature, development and conditions of knowledge.* The more we know about nature and man, the more able are we to answer the questions raised by epistemology.

Idealism.—When used as a technical term in epistemology, idealism means that everything known is mental and that nothing exists which is not known or experienced by some mind. Epistemological idealism is of comparatively modern date, having first been clearly stated by Berkeley, and can be understood only as a reaction against representative realism. It seldom exists now-a-days in its pure, or logical, form and is usually found as an ingredient in more complex positions. The cause of this lack of epistemological clearness in many philosophical systems is the unfortunate tendency of thinkers to mingle metaphysics and epistemology indiscriminately.

Subjective idealism is the name given to the strict form of epistemological idealism. This form involves solipsism. The thinker bases his position upon the discovery that all the present objects of his apprehension are only his ideas. His perceptual world is composed of his percepts, and his conceptual world of his concepts and judgments. Hence the whole objective world which he perceives and thinks is analyzable into objects which have no existence apart from his consciousness. Even other selves, as objects of his thought, are mental contents built up in his mind on the basis of his percepts, feelings and conceptual inter-

pretations. Since epistemology must judge existence in terms of knowledge, this fact means that others do not, so far as we can tell, exist outside of our own minds. Must we not base our judgments of existence upon our knowledge? We must conclude, therefore, that others do not exist for us, as subjectivists, outside of our own consciousness.

It is obvious that the principle of subjective idealism is that knowledge is confined to, and terminates upon, the objects present in the field of experience of the individual thinker. Knowledge is the apprehension of the object known. But no objects can be so apprehended except those in the consciousness of the particular thinker. Therefore, he can know only the contents of his own consciousness. If we grant the principle, the conclusion follows. We must, therefore, honor the logical courage of men like Schuppe, Rehmke and v. Leclair who have adopted this position.

The metaphysics of solipsism is so apparent that it is well to note it at this point. Strict subjective idealism must assert that reality is mental and is no larger than the thinker's own consciousness. This instance is valuable as showing the dependence of metaphysics upon epistemology.

But subjective idealism usually takes the less logical form of *mental pluralism*. Few thinkers have the courage to affirm solipsism and therefore content themselves with the denial of a physical world outside of consciousness. They do not realize that the epistemological problem is not one of the content of the objects but of their existence outside of knowledge. The distinction between physical objects and 'selves' is obviously a distinction between objects within my consciousness. Hence, if all these ob-

jects are mental, this contrast must be one between two species of the mental in this generic sense. Therefore, the problem for the mental pluralist is to prove that he can accept the epistemological principle of subjective idealism referred to above and still hold to a knowledge of other independent selves. If he cannot, and still is convinced that other selves exist and *are known*, he should reconsider his principle. Most mental pluralists, however, seek to prove that other selves *exist*, rather than that they are known, by resorting either to instinct or to the so-called argument from analogy. But an existent which is not known, nor capable of being known, is hardly an existent of any significance. In other words, subjective idealism does not do justice to the reach our minds empirically claim to have. Is it not true that we are often inclined to believe that we know others almost as well as we know ourselves? And we think of these other individuals as quite outside of our own consciousness. But he who would break down subjective idealism must not be satisfied with pointing out its apparent inadequacy to the facts of experience; he must attack its principle and show that it is dogmatic. *Is knowledge confined to the apprehension of objects in consciousness?* The subjective idealist is right when he asserts that we can apprehend no other objects than these; but is he right in his assumption that there is no other kind of knowledge?

Objective Idealism.—Objective idealism is a form of idealism which arose after Kant. To the epistemologist it is a baffling position because it neglects the whole setting of epistemology. The reason for this neglect is historical. Kant made the vicious mistake of postulating a universal self to correspond to the world of phenomena. Phenomena are mental, yet not in the consciousness of any particular

individual. But Kant was still a realist of an agnostic type because he kept a faith in a really extra-mental realm of things-in-themselves in causal relation with mind. Now the thinkers who followed Kant simply developed this consciousness-in-general which Kant had postulated and dropped the thing-in-itself. The result was objective idealism. In my opinion, then, objective idealism was founded on two things, Kant's assumption of a universal consciousness and the inability to solve the problem of knowledge, common to Kant and Hume. (*Cf.* Chap. VII.)

This origin of objective idealism comes out clearly in the customary definitions of it. The following is typical: "If on the other hand it (idealism) simply says in general terms that experience always consists of ideas, or that consciousness is an universal attribute or form of the contents of knowledge, without adding any reference to a subject to whom ideas and consciousness belong, it is objective idealism." Külpe, *An Introduction to Philosophy*, p. 194. Reality is identified with experience without any indication of the possessor or possessors of this experience. The objective idealist is convinced that "it is one world that we all know, and of which we are all parts. If doubt were thrown on this, not only metaphysics, but all other science, would become an impossibility—even the science of psychology. Yet, on the other hand, the experience of each of us is emphatically *mine*. There is something in it which we can never communicate to any other; and even what we do communicate can be apprehended by another as it is for us only in so far as he learns to put himself in our place. This leads us to note that the experience of each of us, even when we consider it without special reference to any one else, has a subjective and an objective aspect.

We are aware of a world presented to us, which seems somehow independent of our individual apprehension; and we are aware, at the same time, that it is presented to *us*." Mackenzie, *Outlines of Metaphysics*, pp. 17–8. Is it not obvious that objective idealism represents a compromise between realism and idealism in which realism gains the acknowledgment that subjective idealism is inadequate while idealism is placated by the use of experience as a blanket-term? The epistemological problem is not solved but is simply ignored.

Realism.—The defining characteristic of realism is the acknowledgment of realities not dependent for their existence upon the minds which know them. Epistemological realism is a very old doctrine, and there have been many dominant forms of it in the centuries of speculation. Of recent years, there has been an efflorescence of realism in which new forms have been developed. It will be necessary to classify and define the various kinds of realism very carefully. This task is made more difficult by the different views of knowledge entertained. The key to any species of realism is the particular meaning assigned to knowledge. The following is about as satisfactory a classification as can be worked out:

Realisms

Apprehensional		Non-apprehensional
Presentative	Representative	

Let us now explain these terms and offer typical positions as examples.

The older types of realism fall into the two kinds of apprehensional realism. Locke's epistemology is a characteristic example of representative realism. On the

other hand, Reid did his best to develop and maintain a presentative form of realism. The neo-realism of a group of younger American thinkers also falls into this class. The position stressed in the present book is non-apprehensional realism.

According to presentative realism, the individual knower has an immediate apprehension of the independent reality known. Reid and Hamilton (1788–1856) championed this view of knowledge. These thinkers believed in an external physical world and held that knowledge is a perception of this world conditioned by the interaction of percipient and object known. Hence knowledge is the presence of the physical thing to the subject-self. Reid asserted that philosophers had made a fundamental mistake in assuming that "all the objects of knowledge are ideas." Unfortunately, Reid and Hamilton differed in regard to the nature of this directly apprehended object, Hamilton maintaining that it is some quality of the organism of the percipient and Reid that it is an extra-organic thing.

It will be apparent that presentative realism is essentially a defense of Natural Realism.

When the attitude of presentative realism is taken toward objects other than those of sense-perception, we have what may be called rationalistic presentative realism. Thus Bertrand Russell and G. E. Moore, two contemporary English thinkers, hold that we apprehend all sorts of conceptual objects and that these objects are independent of the mind knowing them. A similar view is championed by the new realists of America.

The American form of neo-realism is called by its advocates *epistemological* monism. It is an attempt to restate traditional presentative realism in such a way as

to leave out the apprehending subject-self, the consciousness or awareness of the object. It is a presentative realism so modified as to leave out the apprehending mind as a separate entity. While both Reid and Locke contrast mind and the realities known as distinct realms, the American neo-realists think of consciousness as simply a term for a *relation* into which realities may enter without suffering any change. Thus the characteristic point of departure is a revolutionary re-definition of consciousness. The following quotation will make this attempt clearer: "A content becomes consciousness by becoming related in a certain way. In what way? *By becoming the object to which an organism reacts.* Thus my hat is part of my consciousness, or as we ordinarily say, I perceive my hat, if its color, shape, and other properties control my reaction, for example, lead to my picking it up and placing it upon my head. 'Two plus two equals four' is one of my thoughts, provided this relationship between the number two and itself controls my conduct and leads me to put two two cent stamps on a letter requiring four cents postage. But the hat out of such a relationship is not consciousness; nor is the proposition 'two plus two equals four.'" Marvin, *A First Book in Metaphysics*, p. 261.

This position can only be regarded as a remarkable *tour de force.* The essential objection to it is that it ignores the rôle played by the sense-organs and the distinction between a physical thing and its appearances. It is open to all the objections we urged against Natural Realism. We have identified consciousness with the whole changing field of the individual's experience just as does the neo-realist but we have denied that the objects there present can exist independently. They are for us only mental. In this we agreed with Locke, Descartes and Berkeley.

The position under discussion must be admired as a bold attempt to save presentative realism.

We are already familiar with representative realism. It will be remembered that Locke maintained that ideas (mental objects) are in part like the primary qualities of matter. We called this position selective representative realism. The secondary qualities like color and smell are regarded as purely mental. Knowledge is held to be an indirect apprehension, an apprehension of a mental substitute, caused by the physical world, which is cognitively just as good as the physical world because like it. The essential objections to it have already been considered. It is a copy view of knowledge. Aside from the other objections urged, it assumes that the mental effect is *like* the extra-organic physical cause, a theory which has little for it and much against it. The extra-organic cause is only a discharging agency for very complex cerebral processes. The analogy with wax impressed by a stamp has no applicability.

Non-apprehensional realism should need little explanation by now. It is an epistemological dualism and holds that knowledge consists of propositions built up within consciousness and referred to an acknowledged realm outside of consciousness. At least, this is the case for knowledge of the physical world. Knowledge is knowledge and not a copying of reality. While the champions of neo-realism have tried to re-construct presentative realism, the present writer has tried to do the same for representative realism. But with this difference. He has realized that the view of knowledge which has underlain realism up to the present has been moulded upon the outlook of Natural Realism. Knowledge has uniformly been thought of in realistic circles as a direct or indirect

apprehension of an object. This tendency, which bears witness to the continued influence of Natural Realism, must be resisted. Knowledge is an affair of judgment and of the reference of judgment. It is to the credit of the objective idealists that they have recognized this fact. We may say, then, that non-apprehensional realism is representative realism reconstructed in the light of modern logic and psychology. We have called it an epistemological dualism because the mind which has these propositions is distinct from the realities known. But epistemological dualism must not be confused with metaphysical dualism, which asserts that the universe contains two kinds of reality.

Gnostic vs. Agnostic Realism.—In a preceding chapter, we discussed skepticism and showed how philosophical skepticism contradicts itself. Now, in contrast to skepticism, idealism and the forms of realism we have just examined are gnostic, that is, they assert that reality can be known. The age-old struggle between complex forms of realism and idealism, however, led to the rise of semi-skeptical positions which deny that ultimate reality is known, while admitting that phenomena (mental objects, reality as it appears to man) are present to the mind. According to the emphasis, these positions are called positivism and agnosticism. When men are exhorted to concern themselves exclusively with science and not to befool themselves with questions about a transcendent reality back of phenomena, the positivist is speaking. Thus the positivist is a phenomenalist. When the existence of a transcendent reality is acknowledged but it is sadly asserted that man can know nothing about it, that it is unknowable, we have agnosticism. Auguste Comte is the typical modern representative of positivism or phenomenalism, and Herbert Spencer of agnosticism.

References

Fletcher, *An Introduction to Philosophy*, chaps. 9, 10, 11, and 12.
Fullerton, *An Introduction to Philosophy*, chap. 13.
Jerusalem, *Introduction to Philosophy*, third division.
Marvin, *A First Book in Metaphysics*, chaps. 16 and 17.
McGilvary, *The Relation of Consciousness and Object in Sense-Perception, Philos. Review*, 1908.
Sellars, *Critical Realism*, Preface.
Taylor, *Elements of Metaphysics*, bk. 2, chap. 1.

CHAPTER XIV

TRUTH AND ERROR

Knowledge and Truth.—Having waded through the main difficulties which confront epistemology, or a reasoned theory of human knowledge and its place in reality, we are now in a position to take up a problem which immerses us in new difficulties of a more specific character. The problem of truth logically succeeds the problem of knowledge, yet is of a nature both to test the epistemological conclusions arrived at and to deepen our understanding of them. In a previous chapter, I pointed out that solipsism is an acid test of a theory of knowledge. The same may be said of the problem of truth.

That there is a very intimate connection between our ideas of truth and knowledge comes out clearly in the fact that the expression "true knowledge" is felt to be a tautology. It is like speaking of a round circle. Many thinkers have disregarded this connection and have rashly discussed the nature of truth without a prior examination of the nature of knowledge. The result has been controversies more or less barren of value and rather disheartening in their effect. It has seemed to the general public that Pilate's question was merely being reëchoed by philosophy in a helpless fashion. Yet, in spite of appearances there has been a genuine advance along these lines. New points of view have grown up which have cast light back upon theory of knowledge and have related its problems to the setting furnished by biology and psychology. What

is called pragmatism has been especially active along these lines. But the period of new suggestions and of new angles of vision is about over and the field is ripe for a systematic formulation of the meaning and criteria of truth.

The Meaning of Knowledge.—We must get clearly in mind the exact type of knowledge which is connected with truth. As long ago as Aristotle, it was seen that truth and error are relative to judgment. Sense-presentations and feelings are neither true nor false, they are simply experiences. But wherever, and to the extent that, there are interpretations and associations, the possibility of error enters. Assertions, implicit or explicit, involve a risk of mistake while all non-assertive experiences are free from this danger. "In the actual felt toothache knowing and being are not only inseparable—they are indistinguishable. If, however, I think of my toothache as part of an independent order of reality, my knowledge of it may be true or false. I am then thinking of it as the effect of an exposed nerve, or of an abscess or of an inflammation—as something, that is to say, that is conditioned independently of my consciousness and that will cease to exist when the conditions are altered." Carr, *The Problem of Truth*, p. 18. It has been customary to speak of non-assertive experiences as feeling. All of the field of experience that is merely enjoyed as present, emotions, felt attitudes, wishes, questions, mere thoughts, simply exist and are neither true nor false. Because we have experienced content here, content which may be very rich and complex, we may speak of it as knowledge; but it is not assertive knowledge. For our present purposes, there is no need to be oversubtle and study border-land cases. We can be satisfied with the distinction between explicit assertions and felt

presence. In the one class of experiences there is a distinct *claim* to knowledge; in the other merely a felt presence which is sufficient to itself and intent on its own existence and movement. Is it not true that we are more often willing and dreaming and enjoying and acting than passing judgments?

The question of truth has, then, to do with that type of knowledge which we speak of as beliefs, assertions, interpretations, propositions, judgments. In all such experiences there is a sense of dualism. We are more or less aware that what we are judging about is independent of our judgments. The content of our claimed knowledge is not identical with what is referred to, or intended, in the judgmental experience. Only a little reflection makes us distinguish between the mental content or idea-object which claims to be knowledge and that about which it is knowledge. Thus I may pass the judgment that the Declaration of Independence was not signed on the Fourth of July as ordinarily supposed; but I am aware that this *understood assertion* is not that event which I designate the signing of the Declaration of Independence. The one object is thought of as a present element in my mind, existent only there; the other object is thought of as an event never present in my mind and happening in the United States long before I was born. The understood assertion is admitted to be a mental object and so far existent. But we are not primarily concerned with its existence but with the *claim and reference attached to it as an integral part of the total experience.* All assertive knowledge, when made explicit, involves this complex type of experience and can so be distinguished from those other phases of consciousness which are present to the same degree but have no such characteristic.

Three Common Theories of Truth.—For some time, three theories of truth have held the field of philosophical favor and have fought for supremacy among themselves. These theories are closely connected with epistemological outlooks and their adherents have probably had this aspect of the question, important as it is, too much in mind. To get an adequate notion of truth, we must combine the epistemological problem with an investigation of the actual tests applied to assertions in the various fields of science. Of late, reflection has swung in this direction and bids fair to achieve a clearer and concreter notion of what truth means to human beings.

The three dominant theories of truth are the *correspondence* theory, the *coherence* theory and the *pragmatist* theory. The first is a realist interpretation of that dualism which seems so characteristic of assertive knowledge; the second is a manifestation of idealism; and the third swings vaguely between idealism and realism. Let us try to get these theories definitely before our minds.

The Correspondence Theory.—The original form of the correspondence theory starts, as we have indicated, from the dualism seemingly characteristic of the claim to knowledge made in assertive experiences. These experiences are usually spoken of as ideas or beliefs, and it is said that truth is a property of certain of these ideas. It means their agreement with the reality to which they refer. Falsity or error, on the other hand, means their disagreement with this selected independent reality.

But this preliminary statement is accepted by all. Certainly, truth involves agreement of some sort with reality. The reflective problem of truth arises only when there is the attempt to define the nature of this agreement. The correspondence theory is just such an attempt.

The first, and naïve, form is the position that the idea is a *copy* of reality. If this reality be regarded as a non-mental and imperceptible reality, we have representative realism of the Lockian form. To this type of the correspondence theory, there are two main objections which have generally been regarded as conclusive. First, the idea is thought of as an image which can be like another object; second, the reality is by hypothesis unattainable, so that it is impossible to compare idea and reality to see whether they agree in this sensuous way. Let us examine these objections.

We have seen that the mental object which is commonly spoken of as an idea is an assertion or judgment. But an assertion is not an image, it is something understood, a meaning. The psychologist may try to break it down into a grouping of images for his analytic purposes but it is certainly not experienced as a definite sensuous object which can be compared point by point with another object of like kind. It seems quite clear, then, that this naïve theory of correspondence has been misled by the actual representative relation between idea and percept in human experience. This first criticism carries us naturally to the second. Even were our ideas potentially comparable in this presentative fashion with reality, say as a photograph is potentially comparable with the individual whose photograph it is, the unfortunate fact is that reality is not attainable. The absurdity of the notion is seen when we reflect that, even were it a fact that realities outside of consciousness produce copies of themselves in our minds, we could never know that this was the case. By hypothesis, we can apprehend only the copies. There could be no test for our faith. And there is much in our experience which suggests that effects are not like

causes. The force of these objections is so great that this naïve theory of correspondence has no standing in philosophy.

The correspondence theory has other possibilities but these depend upon a more adequate idea of knowledge. One form, which is usually called the logical theory of truth, goes with a presentative realism and an atomistic metaphysics. "The theory is best described as pluralistic realism. It is the view that the universe consists of or is composed of an aggregate of an infinite number of entities. Some of these have a place in the space and time series, and these exist. Some, on the other hand, are possibilities which have not and may never have any actual existence. Entities that have their place in the perceptual order of experience exist, or have existed, or will exist; but entities that are concepts, such as goodness, beauty, truth, or that are abstract symbols like numbers, geometrical figures, pure forms do not exist, but are none the less just as real as the entities that do exist. These entities are the subject-matter of our judgments, and knowing is discovering the relations in which they stand to one another. The whole significance of this view lies in the doctrine that relations are external to the entities that are related—they do not enter into and form part of the nature of the entities." Carr, *The Problem of Truth*, pp. 24–5. It will be apparent to the student that this position is a form of presentative realism. As a matter of fact, it is neo-realism.

The Coherence Theory.—The inability of realists to achieve a satisfactory correspondence theory encouraged idealists to develop a theory of truth which would fit into their view of reality. A very important school of modern idealists teaches that, while all actual experience is only

a fragmentary part of a complete whole and so more or less appearance, we do have a veritable criterion of reality in the principle of self-consistency. The real is the coherent and harmonious. Only the whole comes up to this ideal and is genuinely real. This whole is usually called the Absolute, and is thought to be of the nature of human experience, only not fragmentary and broken and full of internal contradictions.

But, it will be said, this is a theory of reality, not of truth. That is so, but a theory of truth is deduced from this outlook. It is absurd to assume an external reality to which ideas must correspond. Ergo, truth must be an internal characteristic of ideas themselves, and this must be their consistency. Truth is but another name for the ideal of logical consistency. The more complete and internally coherent a system of propositions is, the more it approaches this ideal and the more truth there is in the system. Truth is an ideal which is never completely realized. Every system of ideas is at once truth and error. There are two sides or directions of all thinking.

The prime objection to this theory is epistemological. It stands and falls with idealism. A second objection is that it ignores too much the specific claim to knowledge of, and reference to, a particular part of reality characteristic of particular assertions. It prefers to discuss such general contrasts as appearance and reality. I cannot help feeling that this disregard of the specific and refuge in the general is connected with the fact that modern idealism is really founded on the inability of Hume and Kant to solve the problem of knowledge. An independent physical world is an unknowable and therefore does not exist. Hence, we are forced to acknowledge only experience. But human experience is not self-sufficient enough to be all of reality.

The consequence is that the dualism of knowledge appears in the form of the contrast between the part and the whole.

On the purely logical side, there are two objections to the coherence theory. There is the formal objection that the proof of the criterion, self-consistency, cannot be founded on itself; and there is the other objection that more than one system of beliefs may be internally coherent. Thus, in scientific investigations, it often happens that rival hypotheses compete for acceptance and that the final decision between them is made, not on the basis of their relative internal perfections, but on that of their agreement with the facts. And this last criticism brings us naturally to pragmatism which has in large measure been an attack upon the point of view of absolutism and a demand for specific, human tests and meanings for truth.

Pragmatism.—Pragmatism is a name for a tendency in contemporary philosophy which seeks to link truth with what is useful and serviceable in human experience. Because it is a *tendency* it is hard to define. Its opponents often do it injustice while its advocates do it more than justice. Like all new movements it has a negative, or critical, side and a positive side. In the space at our disposal, all we can try to do is to show its general drift, chief doctrines and obvious assumptions.

First, a word about its history. In 1878, Mr. Charles S. Peirce wrote an article for the *Popular Science Monthy* in which he proposed a test for ideas: "Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object." This article attracted little attention for nearly twenty years when it was at last referred to by

William James and woven into his criticism of what he considered to be a disregard of concrete human life in both science and philosophy. James's gift as a writer and his standing as a suggestive thinker soon made the term pragmatism widely known both in America and in Europe. Before long, it was the subject of hot debate in which it was bitterly attacked and vigorously defended. From an attitude, it became a fairly definite body of doctrine arranged around a theory of truth as its point of departure. Its most distinguished advocate in America to-day, now that James is dead, is Professor John Dewey; in England, Dr. F. C. S. Schiller. On the continent, there are movements sympathetic with it but none which are strictly identical.

The critical side of pragmatism is an attack upon what it variously calls absolutism and intellectualism. There can be no purely formal and logically internal criterion of truth. There must be a practical, empirically applicable, external, largely non-logical criterion of truth. In contrast to absolutism, pragmatism stresses the value and essential self-sufficiency of human experience. What we are concerned with, first and foremost, is human life, human problems, human points of view, and human situations. Extra-human reality can take care of itself. In contrast with intellectualism, it stresses tests of a non-logical kind such as satisfactoriness, utility, workableness. Such tests it considers not so much anti-logical as super-logical. Logic must be so interpreted as to be seen in its proper setting in relation to purpose, feeling and habit. Logic has been too abstract and formal to be true to human experience as it is. In so stating pragmatism, I am ridding it of those extreme expressions which have done it harm.

The drift of pragmatism is quite obviously toward a biological approach to the interpretation of truth, knowledge and consciousness. Professor Dewey and his associates in America, and Mach, Jerusalem and Simmel in Europe have developed this lead. On the other hand, those who have had a mystical bias, like James, have concerned themselves with the denial of clear-cut, objective, scientific tests for many ideas, especially those connected with religion. The anti-scientific phase of pragmatism is in this branch. Probably this phase is most usually associated with James's famous essay, *The Will to Believe.*

The pragmatist is an idealist rather than a realist in so far as he seems to admit that we do not know a reality independent of our minds. *On the whole, he subordinates the idea of knowledge to that of truth.* The workableness of ideas verifies them or makes them true; it does not make them cases of knowledge. Historically, we can understand this subordination of knowledge to truth, for most of the pragmatists are of the idealistic tradition. In America, it was largely a revolt against objective idealism of absolutistic tendencies.

But, as idealists, pragmatists had no hope of re-interpreting the correspondence theory of truth. And, as anti-intellectualists, they felt the inadequacy of the coherence theory. What was left to them but the sort of theory they did actually develop? "*True ideas,*" writes James, "*are those that we can assimilate, validate, corroborate and verify. False ideas are those that we cannot.* That is the practical difference it makes to us to have true ideas; that, therefore, is the meaning of truth, for it is all that truth is known as." James, *Pragmatism*, p. 201. The criticism which I passed upon this interpretation of truth in my Logic is as follows: "It will be noticed that the meaning of being an actual

case of knowledge, which is a part of the content and setting of every assertion, is omitted. This aspect, in our opinion, is fundamental. The logician who understands his science does not deny the empirical character of the criteria of trueness, but he does assert that the claim of an idea to be knowledge is also essential." Sellars, *The Essentials of Logic*, p. 304.

Just one more point must be touched upon. The majority of pragmatists teach that truth is a changing thing. Ideas are made true by their utility. New conditions demand new ideas and so old truths become untrue and new ideas mount the rostrum in their place. Pragmatists have not enough guarded against a natural misinterpretation. The position seems to land us in a mere changing flux of ideas which are like the favorites of a court, now smiled upon and now frowned upon. The more sane pragmatists have pointed out that the criteria are quite objective and not at all capricious. Dewey has especially stressed the biological setting and has striven to be considered a naïve realist. But I must leave many interesting points untouched and pass to the theory which I wish to associate with non-apprehensional realism.

Truth as a Cognitive Value.—It will be remembered that we insisted on the logical priority of the idea of knowledge to that of truth. And were knowledge always knowledge, we would not have had the term truth at all. Much that claims to be knowledge and has had its claim accepted turns out not to be knowledge. For instance, the Ptolemaic theory of the solar system was long believed in and held to be knowledge about the physical world; today, we have completely discarded it and affirm the Copernican view. It is this occurrence of mistakes, this actual experience that knowledge is not always knowledge, that

developed the reflective values or meanings which we call truth and error. *Truth, or trueness, is a confirmatory value which we attach to assertions about which we no longer have any doubt.* As a confirmatory value, it presupposes the experience of mistake and the rise of the attitude of doubt. Its contrast term is error or falsity. Mistake is an experience; it is the giving up of a belief for reasons which are regarded as satisfactory. Falsity, or erroneousness, is the negative value which we attach to an idea doubt of which has been confirmed. Thus trueness and erroneousness are contrasted cognitive values. How easily puzzles are solved when once an adequate philosophical position has been achieved!

The Criteria of Truth.—A study of scientific method soon convinces the philosopher that the actual criteria of truth are consistency and agreement with the facts. Such is the final status of an accepted proposition. It must be self-consistent and cover the facts. These facts are either elementary propositions which rest upon perception and about which no doubt arises or complex propositions which have already been sufficiently tested. The process of verification which precedes the attachment of cognitive value may be spoken of as the convergence of evidence. "Verification involves responsibility to fact, freedom from self-contradiction, and a flexible harmony with other accepted theories which have passed through similar tests. The criteria of truth are not external but internal. It is absurd to look for some touchstone which can be applied in a mechanical fashion to propositions claiming truth." The flaw in the correspondence type of realism is this appeal to an unattainable external standard. Both absolutist and pragmatist build upon the recognition of this flaw.

How Non-Apprehensional Realism Avoids the Copy View.—I presume that the student has already seen how non-apprehensional realism avoids the shipwreck which has overtaken representative realism. Since truth is only a confirmatory value attached to assertions admitting their claim to be cases of knowledge, the criteria of truth are purely empirical and experiential. Truth is not a correspondence with an external reality at all. But, it will be said, this only pushes the problem one step further back to knowledge. Certainly; but we have shown that knowledge is an irreducible meaning characteristic of our ideas. Knowledge is not an agreement with reality or a correspondence with reality; it is simply knowledge. Human propositions do claim to be knowledge, to give information about reality. Truth is simply the confirmation of this claim after doubt, potential or actual, and the application of tests. Assertions do not correspond to facts but agree with them and cover them. And both the propositions and the facts are mental.

But, if this is knowledge, what is ignorance? Quite evidently, it is a relative lack of knowledge. A sense of ignorance accompanies problems which are not solved and fields which are not completely explored. He who has no knowledge at all of a subject cannot even be aware of his ignorance because the subject would not exist for him.

Knowledge Is a Utility.—Those pragmatists who have approached philosophy from the biological angle have proclaimed that consciousness, itself, is a utility. Adopting the standpoint of Darwinism, they have suggested that it arose and evolved from stage to stage because of its value to the organism in the struggle for existence. It performs a function. Perhaps we need go no further than to main-

tain that consciousness has utility and leave the question of origin. It sounds somewhat far-fetched to assert that a need causes a thing to arise. Yet a need may lead to the development of any feature which is in existence. Now it is being pretty generally granted that knowledge is power. It follows that the ability to acquire knowledge is of value to the organism. Civilization is itself a sufficient commentary on, and confirmation of, this conclusion.

References

Bode, *An Outline of Logic*, chaps. 12 and 15.
Carr, *The Problem of Truth.*
Dewey, *Studies in Logical Theory.*
James, *Pragmatism; The Meaning of Truth.*
Jerusalem, *Introduction to Philosophy*, third division.
Joachim, *The Nature of Truth.*
Marvin, *A First Book in Metaphysics*, chap. 9.
Russell, *The Problems of Philosophy*, chaps. 12 and 13.
Sellars, *Critical Realism*, chap. 10.

CHAPTER XV

MATERIALISM AND SPIRITUALISM

Epistemology and Metaphysics.—Historically, metaphysics preceded epistemology. The early Greek thinkers had worked out an elementary ontology long before they achieved anything which deserves the name of theory of knowledge. "Owing to the fact that the senses and human reflection are first directed to the objective world to which we must adapt ourselves in order to live, the latter inquiry arose historically earlier than the problem of knowledge. Man begins to reflect on himself much later than upon things. It is for this reason that the problem concerning the nature of being has meaning and interest for those who have not yet risen above the plane of naïve realism in the theory of knowledge." Jerusalem, *An Introduction to Philosophy*, p. 135. Much of metaphysics has, therefore, been founded on an implicit and uncritical epistemology. This fact partly accounts for the inadequacies of much of past speculation. Another reason is, of course, the lack of tested scientific knowledge at the service of philosophy. It will be remembered that modern philosophy seeks to round out and develop the contributions of the special sciences into a consistent view of the world. The less the information derivable from science, the more uncontrolled speculation enters. Such speculation is just as much false science as it is false philosophy. The human mind hates a vacuum and wants to have some idea of the world. For these reasons, metaphysics has only

too often been the genial reflection of able men who had no adequate foundation on which to build. We must not be surprised to find sharp contrasts which seem to us unreal and outgrown.

Logically, epistemology precedes metaphysics though it does not precede science. It makes a deal of difference in our interpretation of the world whether we are idealists or realists in our epistemology. In the preceding chapter, we pointed out that the metaphysics of subjective idealism is obviously mentalism. If I can know only what I apprehend and I apprehend only objects in my consciousness, it follows that reality must be for me only my consciousness. This example illustrates the point we have just made, that a thinker's metaphysics, or theory of reality, is closely connected with his theory of knowledge. It is not too much to say that the philosophy of the last two hundred years has been built around the recognition of this fact.

But when we take the relation between these two philosophical disciplines in a more genetic way, we soon realize that there is an interaction between them. If the metaphysics which follows from a given epistemology is obviously inadequate, it often leads the persistent thinker to reëxamine his epistemology to see whether he can discover some flaw or unnecessary assumption in it. The marked contemporary reaction against idealism is a sign of the feeling that an idealistic metaphysics does not enable reflection to cover and organize the facts of science in a significant way.

Materialism and Spiritualism.—We shall now proceed to examine two types of metaphysical *monism* which have engaged the attention of the world for centuries. Every one has heard of materialism, and there are few who have

not heard of its opposite, spiritualism. *We speak of these positions as monistic because they teach that reality is composed of one type of stuff, appearances to the contrary notwithstanding.* For materialism, this one primordial stuff is matter; for spiritualism, it is mind or immaterial spirit. We shall see that these two sharply opposed monisms are naïve and dogmatic. Their epistemological foundations are inadequate.

Materialism.—Naïve materialism is an ontological position which teaches that consciousness is reducible to matter. Matter is reality, and consciousness must be attached to it in some fashion. Materialism is monistic because it maintains that reality is of one kind and that any apparent dualism must be capable of reduction. There is no doubt in the mind of the materialist that matter is pretty directly known. He often seems to think that it is perceived and open to inspection so that its very vitals are exposed to view. Materialism is, then, an abbreviation for materialistic monism.[1]

For even a fair understanding of materialism, a glance at its history is necessary. The general purpose and outlook back of metaphysical materialism will be found its valuable feature, something to be reckoned with even after a critical epistemology has undermined the naïve ontology connected with it. The student will soon realize that materialism has been a sign of a naturalistic view of things and a protest against supernaturalism. Much of the bitter, and often unfair, opposition it has met with has been due to this controversial direction of its speculations.

The early Greek thinkers were monistic and essentially

[1] The following exposition stresses difficulties. The content and plausibility of materialism changes with the advance of science. The older views of matter have been discarded.

materialistic. We must remember, however, that they had no clear-cut conceptual idea of matter at first. The atomism of Democritus was about the first definite expression of a conscious materialism. He taught that the universe consists of atoms and empty space. These atoms differ from one another in size, shape and position but are, in other respects, homogeneous. Changes in things are due to the motions of these elementary particles which collide and combine in various ways. Thus far we have a philosophy of nature similar to what would to-day be called mechanical atomism. But where is there place for mind in such a world? Democritus meets the difficulty by asserting that 'mind,' also, is composed of atoms, the smallest, roundest and most mobile that there are. What, however, did he mean by mind, and what was the relation of this atomic mind to the actual sensations and thoughts which people have? To these necessary questions, his answer is uncertain. It is probable that he did not distinguish clearly between the corporeal and the incorporeal and vaguely thought of consciousness as a part of the nature of these mobile atoms.

The Englishman Thomas Hobbes was the first noted modern materialist. He taught that sensations and ideas are the reactions of the inward parts of the body to the stimuli coming from without. Thus he tends to identify consciousness with motion. In the eighteenth century, naïve materialism reached its height in France. The physician La Mettrie (*L'homme machine*, 1748) endows matter with the capacity of acquiring motor force and sensation. The mind has its seat in the body and is extended and material. Essentially the same views find expression in Holbach's *Système de la nature* (1770). His chief purpose is to combat all forms of supernaturalism. "Mind

is simply body regarded under the aspect of certain functions or powers."

Toward the middle of the nineteenth century, materialism again came to the front owing to the decay of the romantic idealism of Hegel, Fichte and Schelling and the discovery of new facts about the dependence of the mind upon the body. Unfortunately, these new advocates of materialism were untrained in philosophy and psychology and made the most absurd statements in a very dogmatic fashion. Vogt's *Köhlerglaube und Wissenschaft* (1855), Moleschott's *Der Kreislauf des Lebens* and Büchner's *Kraft und Stoff* are the chief works of this materialistic movement. None of them are very satisfactory, but they do issue a challenge to philosophy to meet the facts of the mind-body relation without hedging. When Vogt asserts that the brain secretes thought as the liver secretes bile, it is easy to point out the difference between the two cases and to set aside all talk of secretion as meaningless; yet the close connection between consciousness and the brain is indicated by a very large number of undeniable facts.

There are *three* forms which naïve materialism takes, the *attributive*, the *causal* and the *equative*. Attributive materialism makes mind (consciousness) an attribute of matter; the causal makes it an effect of matter; and the equative makes it identical with matter. Let us look at these forms very briefly.

Attributive materialism forgets that it is merely using an expression as an explanation. If matter is so conceived as to exclude consciousness from its nature, it is meaningless to attach it externally by calling it an attribute. How are attributes related to the substance of which they are attributes? Do they reveal the nature of

that substance, or are they something external? Such questions as these remain on the metaphysical side, while, on the epistemological side, we cannot help feeling surprised by the naïve assumption that we know matter in a direct and essentially intuitive way. Materialism is naïve and dogmatic philosophically because it has no mastery of fundamental concepts and no conception of theory of knowledge. It is a faith more than a philosophy.

Causal materialism is confronted by similar objections. To say that consciousness is an *effect* of matter or that matter *produces* consciousness is less intelligible than it sounds. Here, again, the materialist shows his ignorance of fundamental concepts. What is a cause? Does one thing produce another? Since Hume's time, philosophers have been well agreed that a cause and effect relation is essentially temporal and gives us no insight into any creative production. If matter is alien to consciousness, as the materialist usually assumes, the rise of consciousness from it is the worst sort of mystery. It is, moreover, not even a fact since no human being has seen matter produce consciousness out of itself. Why? Because no human being has ever perceived matter. Matter is an abstract concept which needs analysis of a searching kind. Causal materialism does not contain enough philosophical analysis to deserve the name of an ontology. When all is said, that must remain the chief objection to it.

Equative materialism is obviously a *tour de force* which comes perilously near self-contradiction. If the materialist claims to have a clear concept of matter, he must ask himself whether his concept of consciousness is the same in its content. If he does not have a clear concept of matter, materialism is merely a term for a vague sort of naturalism. The materialist cannot escape this dilemma. To

assert that consciousness is motion or energy is nonsense. It is like saying that black is hard. Yet those who have taken the first horn of the dilemma have been forced to make analogous assertions.

The examination of materialism has been interesting in itself because every one desires to know what materialism is and what objections philosophers raise against it. But it has also been valuable as a clear illustration of the point made in the first section of this chapter, *viz.*, that epistemology logically precedes metaphysics. The philosophical weakness of naïve materialism is twofold: it has neither a systematic epistemology nor a well-analyzed ontology. And the reason for the second element of weakness can be traced to the first. Had these scientists taken philosophy seriously enough to construct a reflective theory of knowledge, they would probably have shown more metaphysical depth. What we can excuse to Democritus who lived at the beginning of science and philosophy, we cannot excuse to an educated man of to-day. No one claims to be capable of being a physicist or a chemist without years of severe training: why should they think themselves capable of becoming philosophers without a similar training? But we must temper our blame with this praise, materialism has always stood for a frank recognition of the facts of human life. It has done this sometimes brutally and crudely, yet it has done it. The materialist has nearly always been courageous and intellectually honest.

Spiritualism.—Spiritualism is the antithesis of materialism. It may be defined as the doctrine which maintains that all existence is mental or spiritual. The spiritualist is not always careful to define what he means by spirit and mind, usually being contented with the negative explanation that he means what is not material. Of recent

years, however, there has been a decided drift toward a more empirical conception of spirit. Spirit is consciousness; or it is conserving and creative memory which reveals itself in consciousness. The main thesis of spiritualism is that the apparently material world is the symbol of realities like the more mental aspects of ourselves.

Spiritualism has had various forms, differing fundamentally among each other. Hence, it is a difficult task to give the gist of it and summarize the objections which are usually urged against it. During the Middle Ages, the prevailing ontology was dualistic for it accepted a material world (created) and a hierarchy of spirits. Probably Leibnitz was the first thorough-going spiritualist. Beginning with the conception of substance as that which exists *per se*, he added the further premise that only that which has the power of action can exist. But, he maintained, matter is passive since extension is its essence (Descartes). Therefore, reality must be immaterial and unextended. The system of Leibnitz in all of its brilliancy is an example of *deductive ontology*. The premises must be granted before the conclusion follows.

But would not the modern thinker hesitate before accepting the further interpretations with which Leibnitz loads his *dynamic conception of reality?* Are we so certain to-day that only mind can be active? Indeed, is not the inclination the other way, so that consciousness is often thought of as passive and ineffective? Again, would the thinker trained in modern science so easily admit the Cartesian conception of matter as mere passive extension? Yet Leibnitz's argument demands this as its opponent position.

One of the chief objections the modern thinker has to the systems of men like Descartes, Spinoza and Leibnitz is the lack of an epistemological foundation for their on-

tological theories. Of course, there is an epistemology, but it is implicit and relatively uncritical. Their favorite procedure was to begin with definitions and deduce conclusions from insufficiently tested contrasts. Can we not expect better results in the long run from a more inductive mode of reflection? Philosophy must endeavor to find out what knowledge is and how it is referred and what fundamental concepts are discoverable in it.

Let us examine the system of a contemporary spiritualist, Wilhelm Wundt. He argues, much as we have done, that the contrast between the physical and the psychical is one which grows up within experience. The physical sciences develop the one term of the contrast and arrive at the atom as the ultimate physical unit, while psychology investigates the other term and reaches the assumption of an ultimate qualitative unit called will. The metaphysician must somehow harmonize these two units. The hypothesis which, according to Wundt, does this most satisfactorily is the assumption of a will-atom as the primary element of reality.

As Höffding points out (*Modern Philosophers*, pp. 29–31), Wundt really argues much as Leibnitz did. "The world must be cogitated either as material or else as spiritual unity. We can no other. Wundt's choice is not doubtful. The only activity immediately given is, and remains for us, our will." It will be remembered that both Berkeley and Leibnitz used these principles as their premises also. But let us examine these premises. What is the material world but the world we gain knowledge about in the physical sciences? Is it so certain that this world, while not simply composed of consciousness, excludes consciousness? In other words, is this harsh antithesis with which all these thinkers begin, a justifiable one epistemologically? We

shall examine this assumption pretty thoroughly in the succeeding chapters. The second assumption, also, needs overhauling. What is this "will" of which Wundt so confidently speaks? When we come to his psychology, we find that Wundt "does not even reckon will among the elements of consciousness. He treats the phenomena of will as the most composite and special forms of conscious life, and numbers only sensations and feelings among the psychical elements." Höffding, p. 19. Külpe, at one time Wundt's pupil, decides that "no one of the elementary processes of our mental life can be regarded as 'primary' in any absolute and exclusive sense." *Introduction to Philosophy*, p. 181. Thus it cannot be denied—and I think that practically all psychologists would back me up in this statement—that Wundt's metaphysical hypothesis of a qualitative will-atom as the primary element of reality has slight connection with the facts of psychology. There also remains the further question, what content we must give to the fundamental concept of *activity*. Activity is a category. Can it be used by both the physical and the mental sciences? Or is it confined, as Berkeley, Leibnitz and Wundt assume, to the mental sciences? These last questions should make the student realize the intimate connection between philosophy and the sciences. A philosophy which refuses to subject itself to a cold and exhaustive analysis of the fundamental ideas and setting of the sciences is not continuous with science.

Two Types of Spiritualism.—It is possible to distinguish two types of spiritualism which may be designated *realistic spiritualism* and *idealistic spiritualism* respectively. Historically, Leibnitz, Renouvier, Ward, Paulsen and Wundt may be classed as realistic spiritualists, while the objective idealists and mental pluralists may be classed

as idealistic spiritualists. Unfortunately, the epistemological foundation is not always clearly enough indicated nor logically followed out, so that the ontology of certain known thinkers can only be spoken of as spiritualistic.

It is easy to see how the objective idealist persuades himself that all existence is mental or of the nature of sentient experience. His ontology flows from his epistemology. Mr. F. H. Bradley is a good representative of a pretty empirical type of objective idealism. His chief argument in favor of spiritualism boils down to the *argument from content:* "Find any piece of existence, take up anything that any one could possibly call a fact, or could in any sense assert to have being, and then judge if it does not consist in sentient experience." *Appearance and Reality*, p. 145. But the non-apprehensional realist admits that everything that is apprehended is mental. The more formal objective idealists connect with the Kantian and Hegelian tradition.

Modern realistic spiritualism is taking more and more the form of what is called *panpsychism.* There is a real world independent of the individual knower; but this world as perceived or as conceived is only a phenomenal world; the real world is of the nature of consciousness which is the only kind of reality we have direct acquaintance with. The panpsychist is a phenomenalist who rejects solipsism and, by means of the argument from analogy, convinces himself that the more inclusive reality must be mental. A surprisingly large number of psychologists have been drawn in this direction.

We must leave it to the historian of philosophy to present and analyze the many variations of spiritualism. Human ingenuity and mental keenness of the highest grade have been at work constructing systems of the most

abstract and subtle kind. But no system is stronger than its premises.

References

Büchner, *Force and Matter.*
Fullerton, *Introduction to Philosophy,* chap. 14.
Hobbes, *Works,* Molesworth ed. or *Selections by Calkins.*
Jerusalem, *Introduction to Philosophy,* Fourth Division.
Külpe, *Introduction to Philosophy,* chap. 3.
Lange, *History of Materialism.*
Paulsen, *Introduction to Philosophy.*
Strong, *Why the Mind Has a Body,* chaps. 8 and 10.
Taylor, *Elements of Metaphysics,* bk. 2, chap. 1.
Ward, *Realm of Ends,* chap. 1.
Windelband, *Einleitung in die Philosophie.*

CHAPTER XVI

DUALISM AND CRITICAL NATURALISM

Natural Dualism.—In the preceding chapter, we examined two characteristic forms of monism, materialism and spiritualism. These are clear-cut and unambiguous positions which seek to reduce the world to one fundamental kind of reality. Materialism and spiritualism are simple and emphatic ontologies which claim a pretty direct insight into the very stuff of reality. The materialist proclaims that reality is matter and that there can be no doubt at all about the nature of matter. The spiritualist, or mentalist, is equally certain that all reality is mental and that everyone knows what the mental is. After carefully examining their respective claims, we became convinced that both ontologies were too naïve. Neither is founded on a satisfactory epistemology and neither does justice to the distinctions characteristic of experience. In a very real sense, each establishes itself but does not disprove its opponent. There is a measure of truth in materialism, yet there is also a measure of truth in mentalism. Evidently, these simplified monisms are overhasty constructions which will not stand critical inspection.

Reflection on the inadequacy of materialism and spiritualism has led many thinkers of late to champion *dualism* as at least a more valid starting-point for metaphysics. It is held that both physical things and minds are revealed in experience and that these two classes of phenomena are

obviously different from each other and equally ultimate. A couple of quotations will make this rejection of materialism and spiritualism in favor of both matter and mind somewhat clearer.

"The plain man finds himself in a world of physical things and of minds, and it seems to him that his experience testifies directly to the existence of both. This means that the things of which he has experience appear to belong to two distinct classes." Fullerton, *An Introduction to Philosophy*, p. 202. Thus Fullerton maintains that physical things and mental facts are both given in experience and are clearly distinguishable from each other. It is absurd to try to reduce the one class to the other.

A more moderate statement of the position of the natural dualist is to be found in the writings of Sidgwick. Natural dualism is for him the position of common sense. "For there is this advantage in putting questions from the point of view of Common Sense: that it is, in some degree, in the minds of us all, even of the metaphysicians whose conclusions are most opposed to it—such as the extreme Sensationalist or Idealist. It is the view with which we all start when we begin to philosophize. . . . In saying this I do not mean to affirm—as some who have maintained Natural Dualism as a philosophical conclusion have affirmed—that Natural Dualism is involved in the *original* presentation of the objects of experience to the experiencing mind. All I affirm is that we find it in our ordinary thought when we begin to reflect on it, nor can we by the utmost effort of memory recall a time when we did not explicitly hold it. If the belief in an external material world existing as we know it independently of our knowing it—so that our knowledge of it does not affect its existence—if this belief is the result of inference from data

given originally as merely mental fact, this process of inference preceded the stage of conscious reflection. I ought further to explain that in speaking of Common Sense I do not mean entirely unscientific Common Sense, but the Common Sense of educated persons rectified by a general acquaintance with the results and methods of physical science." Sidgwick, *Philosophy, Its Scope and Relations*, pp. 42–3.

When we come to examine the writings of these dualists with care, we soon find that their epistemology is very similar to that of Natural Realism. They are either presentative or representative realists or a vague mixture of both. Here, again, we find that ontology is founded on epistemology. The dualist's quarrel with the materialist is not so much in regard to the conception of matter as in regard to the standing of mind. Both assume that the physical world is an object of knowledge, but the dualist asserts that the mental realm is equally real and irreducible. In opposition to the spiritualist, he maintains that the physical world is known and known to be different from mind.

What Are Mind and Matter?—One of the unsatisfactory features of materialism, spiritualism, and dualism is the glib way in which the terms "mind" and "matter" are employed. Surely the reader has already been asking himself what is meant by these terms. Let us see whether we can make out.

According to Sidgwick, there is a general recognition that psychical changes are, as objects of experience, altogether distinct from the nervous changes that accompany them. "Since Descartes, philosophical thought has found no difficulty in distinguishing the thinking, feeling, willing thing that each one of us is conscious of being,

from the complex aggregate of extended solid particles which each of us calls his body." *Ibid.*, pp. 52–3. Obviously, matter is simply a term for the material world as this is conceived in science as extended, dynamic, conserved. "Our mental states exist in time, have duration; the objects of nature all have length, breadth, and thickness, as well as duration." Marvin, *An Introduction to Philosophy*, p. 209. Consciousness is the unextended, that which exists only in time, that which we feel immediately. Such is the contrast which the dualist has in mind.

Why Mind and Matter are Held to Be Distinct.—The dualist asserts that mind and matter are clearly and obviously distinct. Why is he so certain of this disparateness? As our quotations have shown, he seldom gives explicit reasons but, instead, treats the distinctness of the two realities as evident and undeniable. But a study of dualistic literature soon reveals the motives at work. We shall content ourselves with pointing out three of the more important ones. First, the dualist starts from the position we have called Natural Dualism, which is closely connected with Natural Realism. An examination of the development of Natural Dualism by science convinces him that the distinction between the physical world and the realm of knowing and feeling minds is genuine and ultimate. Second, the inability of past thinkers to achieve a clear and satisfactory monism of an intelligible sort makes him skeptical of all attempts to overcome and transcend the apparently given contrast between the physical and the mental. Third, the categories which apply to consciousness are certainly widely different in many respects from those which apply to the physical world as known by the physical sciences. Let us look at these dualistic motives a little more closely.

The dualist is, as we have suggested, a presentative or a representative realist. When he is a presentative realist, he believes that the material world is given as an object to mind just as immediately as the mental realm itself is. Physical objects can, therefore, be inspected and are seen to be different from the acts of consciousness, the feelings, motions and volitions which are set over against them on the subjective side. The distinctness of these two realms is a datum of comparison as well founded as the fact that black is not white. The representative realist is faced by greater epistemological difficulties because his position is not so naïve and gives greater play to critical reflection; but he, also, is convinced that he knows the physical world as well as the mental realm and therefore is aware that they are different. It must be remembered that the representative realist believes that he *apprehends* the material world, even though indirectly through a revelatory idea. As for the presentative realist, both kinds of realities are objects open to inspection. How, then, can there be any mistake?

It may be well to stress the fact that, for the form of realism which we have favored, the physical world is not apprehended either directly or by means of mental substitutes, while mental objects are. Hence non-apprehensional realism holds that the comparison upon which the other forms of realism depend for their assurance of dualism cannot be instituted except by a mistake which takes mental objects to be physical realities. So much for this foundation of dualism.

The inability of past thinkers to achieve a satisfactory monism must also be regarded as a motive at work reenforcing a contemporary drift toward dualism. The old speculative attempts at a transcendental union of mind and

matter in the bosom of an absolute substance have lost their savor in the more empirical atmosphere of the present, while efforts to prove that the distinction between the physical and the psychical is only a contrast within experience have not met with success. The most suggestive approach along this line is that made by Ernst Mach. It has, however, pretty obvious faults which have prevented its general acceptance. The consequence of this failure of monism has been an increased respect for Natural Dualism.

The physical sciences have developed a set of categories, or fundamental concepts, which differ markedly from those developed by psychology. The physical world as known by the physical sciences is spatially measurable, massive and dynamic. Its changes are changes of position and of the distribution and form of the energy involved. Since the knowledge achieved is of this character, the scientist naturally conceives the world in terms of these concepts. It is a spatial, massive and energy-containing world. Moreover, it is a substantial and conserved world which neither increases nor decreases in quantity.

Psychology, on the other hand, has long been moving in the contrary direction. The psychical is intermittent, non-massive, and essentially a temporal process. Psychology has its own data, and this is its view of its subject-matter.

The consequence of this contrast between the fundamental concepts of the two types of science has been a deepening of the dualism with which common sense starts. What hope is there of a monism when every advance seems to confirm Natural Dualism? The suggestion made by Wilhelm Ostwald that consciousness is a form of energy has been rejected by the majority of thinkers as a merely

verbal solution at the best and, at the worst, an illogical extension of the concept of energy from its physical meaning, where it is a quantity, to consciousness which is not a quantity.

The Setting of Physical Science.—Since the important consciousness-body problem reflects Natural Dualism and its developed form, scientific dualism, it may be well to get to the foundation of these dualisms as completely as possible. We have pointed out that the standpoint of Natural Realism is closely connected with Natural Dualism. I see this book and take it to be an independent thing whose very nature is open to inspection. I don't see what I call consciousness either in it or about it. At this level, consciousness is thought of as an inner sphere somehow in the background and related to my body. All the material for a dualism is present in this outlook. Now the physical scientist works in and from this setting. His atoms are like the things perceived in this regard. They are known, yet are quite external to the knowing and all that is concerned with the knowing. This outlook is strengthened by the fact pointed out above that his data and theories fall into categories like space, mass, energy and motion which differ from those into which the data of psychology fall. The result is that the physical sciences conceive the physical world in terms of their knowledge and, encouraged by the setting of Natural Dualism, assume that their knowledge exhausts the nature of the physical world.

The Setting of Psychology.—Psychology is a special science like any other special science so far as its setting goes. Hence, the psychologist, also, begins with the outlook of Natural Realism and Natural Dualism; only he is concerned with the inner sphere of experience which the

physical scientist disregards. His study of this inner realm leads him to develop the categories referred to above. Moreover, he is confronted with the apparent connection of consciousness with the body, a fact which physics and chemistry can ignore. He is convinced that the stream of consciousness is somehow related to the brain. Yet, because extension is a fundamental category of the physical realm, lack of it is judged a feature of consciousness. We feel certain that we cannot lay hold of another's consciousness and pick it to pieces as we can a physical thing. Consciousness is intangible and cannot be buffeted about like a ball. It cannot be measured by superposing a yardstick upon it. It must be located somehow in the head, *in* one of the physical things rather than *among* them. These conclusions probably give a large share of its meaning to the statement, made by both psychologists and philosophers, that consciousness is unextended.

Is This Contrast Justified?—We have helped the dualist to work out the contrast between consciousness and the physical realm. It is the validity of this antithesis which he upholds against the materialist who wishes to belittle consciousness and the spiritualist who desires to do away with the physical. But it will be remembered that in a preceding chapter (Chap. IX) we had already discovered this contrast as one which inevitably develops within the individual's experience. The question which now arises is that of its significance for ontology. If my consciousness is *distinguishable* from the acknowledged realm of the physical about which I can gain knowledge, must it be regarded as alien to it? *Does this distinction involve a dualism of two kinds of realities?* The dualist holds that it does. We, on the contrary, admit that the contrast between the knower's consciousness and the physical

develops naturally and stands out as a significant epistemological contrast but regard the quick leap to an ontological dualism as unjustified. The question before us is this, Can we acknowledge this contrast and yet so interpret it as to avoid dualism?

Cartesian Dualism.—The logic of dualism comes out very clearly in its Cartesian form. It will be remembered that Descartes taught that the essence of the physical world is extension, while the essence of the world of thought is thinking. In other words, Descartes formulated a dualism of two substances, alien to each other, whose respective essences were revealed in extension and thinking. Extension and thinking are supposed to give insight into the very depths of these two substances or realities. Thinking reality is not extended, and extended reality does not think. But this formulation is very *a priori* and dialectical. What should we mean by essence? When we say that the physical world is extended, does this mean any more than that it is measurable and that its parts exclude each other dynamically? And this is surely knowledge about the physical world, but just as surely no such mysterious revelation of the stuff of the corporeal world as Descartes assumed. But when we examine dualism, we always find that it assumes that we have such knowledge of the physical world as to convince us that consciousness must be excluded from it. *The outlook of apprehensional realisms is never far from dualism.* The dualist just knows that the physical is entirely different in its very stuff from consciousness so that they can no more mix than oil and water can.

We do not Apprehend the Physical World.—Let us recall that we came to the epistemological conclusion that we cannot apprehend the physical world either directly

or representatively but can obtain knowledge about it in terms of propositions. Now it is easy to see that dualism is founded upon the assumption that we do possess apprehensional knowledge of the physical and so know by comparison with the mental that the two are different. But since we hold that consciousness is the only reality whose very stuff is given and that we have only knowledge about the physical world, this comparison is not open. Dualism, in other words, is founded on a false epistemology.

But even though we do not apprehend the physical world, may it not be that the knowledge about it which the physical sciences have achieved contradicts consciousness? Can that which is extended and dynamic and conserved contain consciousness? I must confess that I see no contradiction. Let it be remembered that we are not saying that consciousness is co-extensive with the physical world nor that consciousness is a revelation of the whole nature of the physical world. All we are maintaining is that consciousness can be regarded as part of the nature of the physical world without any conflict with the truth of the judgments which the physical sciences pass upon nature. If so, there is no reason to assert a dualism with the physical as one term and consciousness as the other. The physical and the mental sciences supplement each other.

A Monistic Interpretation of the Distinction between Consciousness and the Physical World.—But this denial that there is either an epistemological or a scientific reason to assert that consciousness is alien to the physical world leaves us with the problem of interpreting the empirical distinction between consciousness and the physical world upon which the dualist builds so heavily because of his false epistemology. Yet a little reflection shows us a

natural interpretation. Looking back at the motives for the distinction, we realize that an important one was the distinction between things and ideas. We saw how reflection developed this contrast into that between an acknowledged and known realm conditioning consciousness and consciousness itself. Consciousness is experienced while this controlling realm is only known. When we are thinking about this acknowledged realm in terms of the knowledge secured by the physical sciences, we arrive at the contrast between consciousness and the physical which we indicated a few pages ago and which we now see involves no ontological dualism.

Critical Naturalism.—The ontological position at which we have arrived as a result of the progressive criticism of materialism, spiritualism and dualism in the light of non-apprehensional realism can be called *critical naturalism.* Materialism is an attempt to secure naturalism which fails because of the inadequacy of the theory of knowledge on which it is based. It cannot do justice to the distinctions characteristic of experience. Dualism attempts to do justice to the distinctions of experience but misinterprets them as a consequence of the belief that the distinction between consciousness and the physical world consists of the presentation of two kinds of reality. This misinterpretation is the result of apprehensional realism. Spiritualism, on the other hand, is just as one-sided as materialism but seeks to justify this one-sidedness by an appeal to idealism.

The truth of critical naturalism rests upon the truth of the theory of knowledge which it presupposes. The foundation of that has already been sufficiently given and need not be repeated. But the manner in which it leads to an ontology which meets all the problems with such

ease and simplicity must certainly be regarded as an additional argument in its favor. As we suggested at the opening of the preceding chapter, a satisfactory metaphysics must be regarded as a verification of an epistemology, just as an unsatisfactory one must be considered a reason for reëxamination. The crucial test of critical naturalism will come in the consciousness-body problem. But we must first gain a clearer idea of a few basic categories. To this end, we shall now pass to a study of space, time and substance.

References

Fullerton, *An Introduction to Philosophy*, chap. 14.
Mach, *The Analysis of the Sensations.*
Ostwald, *Vorlesungen über Naturphilosophie.*
Sellars, *Critical Realism*, chap. 2.
Sidgwick, *Philosophy, Its Scope and Relations*, lecture 3.
Smith, *Studies in the Cartesian Philosophy*, chap. 3.
Ward, *Naturalism and Agnosticism*, vol. 2.

CHAPTER XVII

THE WORLD AS KNOWN BY THE PHYSICAL SCIENCES: SPACE

About the Categories.—It has become customary for philosophers to speak of fundamental features of the world as known as categories. Thus we think of nature as spatial and in time, of things as having position and size, of substances as possessing properties, of events as caused. Such fundamental predicates which recur in scientific knowledge are called categories. They are not things or events but general characteristics of things and events as these are known. We ask *how large* a thing is, *when* it happened, *how long* a process took to occur, how it is *related* to other things, what its *structure* and *properties* are. These general headings for investigation about the world under which we can catalogue our knowledge and in terms of which we think of reality are of obvious importance for metaphysics. Much of its task, in fact, consists in the attempt to analyze and understand the full import of these primary terms of our knowledge about the world. They furnish the framework which specific information helps to fill out. It is with these basic concepts, or headings, which are omnipresent in science, but seldom investigated, that the philosopher is concerned.

Space a Category of the Physical Sciences.—In our examination of the distinction between the physical world and consciousness, we discovered that spatiality is a fundamental characteristic of the physical world as known

by the physical sciences. In fact, we saw that it is customary to use it as a *defining attribute*. The physical is spatial or in space. We must conclude, then, that space is a category essential to our knowledge of nature.

But we cannot let the matter rest there and take it for granted that we know adequately without severe reflection what we mean by space. Is space a receptacle into which physical things are put? Or is it an attribute somehow attached to the physical world? Is space, as Descartes thought, a revelation of the essence of the physical? Such questions as these arise for consideration and begin the demand that we analyze this category to see what it implies.

Five Kinds of Space.—Strange as it may seem to the reader, there are at least five distinguishable kinds of space. These are: sensational space, perceptual space, conceptual space, abstract mathematical space, and, finally, space as a category of physical science. Those who have not realized that there are these different kinds are prone to raise questions which are relevant to one kind and apply the answers to the other kinds. The result of this confusion has been disastrous.

Sensational Space.—It is the task of the psychologist to discover the various factors whose genetic synthesis leads to the perceptual level at which we all live. Assuredly, the ability to distinguish position, order and distance is largely the function of the inter-play of elements in which the experience of movement seems to be predominant. Much of the vital meaning of spatial relations is due to the judgment of the extent and direction of the movements which interpret them. But laboratory analysis has shown that the various senses have primitive spatial experiences which are qualitatively different.

Visual space is not the same as tactual space. Yet the mind always works out a satisfactory correspondence between them. We can see the sharp corner that we feel and so merge vision and touch. An instance of a region for which no such satisfactory correspondence has been established is the cavity of the mouth. "The interior of one's mouth-cavity feels larger when explored by the tongue than when looked at. The crater of a newly extracted tooth, and the movements of a loose tooth in its socket feel quite monstrous." Here we are nearer an undeveloped spatial experience. It is obvious that we have to do with consciousness. Sensational space exists only in consciousness.

Perceptual Space.—This normal space arises at a level at which the synthesis of the various sources of experience has been pushed a long way. Visual and tactual space have been brought together so intimately that we pass from the one to the other without any sense of break.

But the perceptual level is likewise the level of things and their qualities; it is the stage of Natural Realism. As we should expect, perceptual space reflects the outlook of common sense and appears in the completest harmony with "things." Things are extended, they have positions, they are at certain distances and directions from one another. The whole perceptual field arises together and what we have called perceptual space is just an aspect or form of it. But we must conclude that this space is inseparable from the perceptual things of which it is an essential ingredient. The breakdown of Natural Realism has its import for perceptual space just as it has for perceptual things. Neither can exist apart from the consciousness of the individual percipient.

Conceptual Space.—The development of our space-experience continues, and space becomes more and more conceptual in character. Perceptual space is the synthesis of motor, tactual and visual factors, while conceptual space is the result of the tendency of various instances of perceptual space to add themselves together and give the representation of a continuous world spread out equally in every direction. The individual perceives only a portion of this continuous world at any one time but assumes and conceives the rest. This conceived realm is the physical world at the level of Natural Realism. We admit that we see only the part under our eyes but *know* that there is a wider domain like the part we see. Thus we must regard this conceptual space as the form of the conceived world of Natural Realism. The physical world is still regarded as something capable of being apprehended. Things are spatial and in space just as they are red and heavy. The vague consciousness of this larger, more inclusive realm floats in our minds while any part of it is being perceived. How does this conception and belief arise? "Different impressions on the same sense-organ do interfere with each other's perception and cannot well be attended to at once. Hence, we do not locate them in each other's spaces, but arrange them in a serial order of exteriority, each alongside of the rest, in a space larger than that which any sensation brings. This larger space is, however, an object of conception rather than of direct intuition, and bears all the marks of being constructed piecemeal by the mind." James, *Principles of Psychology*, Vol. II, p. 185.

This conceptual space, also, is inseparable from the physical world as conceived at the level of Natural Realism. It is apprehended by the mind's eye and is the form

and essential feature of the accepted physical realm. There is, moreover, no limit, so far as common sense and science can see, to the process of extension. Astronomy tells its marvels of constellations beyond constellations in pathless space, and the mind grows weary in continuing a process of addition to which there seems to be no necessary end. Yet it is important to note that space is always intertwined with bodies just as it is for the physical realm before our eyes. Space is still the form and part of the content of the apprehended world. *It is not a receptaculum into which things are somehow put but a distinguishable aspect of the apprehended world.*

Mathematical Space.—The position we shall adopt and defend is that mathematical space is a construction made by the human mind working upon normal conceptual space under the guidance of mathematical interests. We do not infer mathematical space in some mysterious way but create it out of conceptual space by abstraction and idealization. We disregard any aspect of the sensible world but its extension. We learn to abstract from the things of which conceptual space is the form and part of the content. In this way, we obtain the concept of an empty space which is homogeneous in all directions. There can be little doubt that this process of abstractive construction is aided by the fact that bodies change their relations without changing their forms. This experience of rigid bodies which move from place enables the mind to advance to the conception of space as such.

Mathematical space is an apprehended object and, as such, exists only for the minds which apprehend it. We must conclude that it does not exist outside of consciousness. But since this is true for the sensible and phenomenal world of things which we apprehend, it must not be re-

garded as at all derogating from the value of mathematical objects. Their mental character does not affect their content or the truth of the propositions which are demonstrated about them with such care.

Is Space Infinite and Infinitely Divisible?—We asserted that questions are often asked of one kind of space which are meaningless when applied to other kinds. The question of infinity is an instance of this. Sensational space is not infinite, nor is perceptual space with its given horizon. When we ask whether conceptual space is infinite, we usually mean to enquire whether the physical world is infinite; for concrete, conceptual space is only the form of the visible world. We shall again ask the question of infinity when we come to the category, which concerns a part of our knowledge about the real physical world. At present, we are enquiring whether mathematical space is infinite.

I see no reason why the philosopher should not agree with the mathematican who asserts that mathematical space is continuous and potentially infinite. When a mathematician speaks of an infinite number of points between any two positions on a straight line, he means that this portion is a continuum. In a continuum, there is no *next* position, but always one between and so on indefinitely. But is mathematical space infinite in extent? Certainly no apprehended space is infinite. But if we can think of no natural limits to space, we can conceive it as extensible beyond any given limits. In fact, thought is not able to place a limit to the possible relations and arrangements of mathematical objects.

Space as a Category.—To be cognitively objective, a category must be an essential element in the framework of knowledge. If space is such a category, we have the

right to speak of the physical world as spatial. But we must be very careful to avoid an apprehensional view of the world. *We must simply ask ourselves what is known about the physical world under the heading of space.*

The physical world is known as measurable and ordered in a side-by-side fashion. Thus the more we know about the constitution and dynamic relations of the physical world, the more we know about the world as spatial. To assert that nature is spatial does not mean that nature is *in* a semi-reality called space or that mathematical space is an attribute of the physical world, but simply that our knowledge contains measurement in terms of units, that things exclude one another and are ordered in their relative positions. Such knowledge is preliminary and needs filling out, yet it is true as far as it goes. It is readily seen, however, that, far from giving us a vision of the essence of nature, it only furnishes the framework for the investigations of the more empirical sciences like chemistry and biology.

Is the Physical World Finite?—One of the puzzles of metaphysics has been the question of the finiteness or infinity of the physical world. Kant made this problem one basis for his conclusion that nature is purely mental and has no existence apart from the knowing mind. But we are realists and believe in an independent, acknowledged realm about which we possess knowledge. What, then, must be our own conclusion in regard to this age-old question? We would put it in the following way: If the terms finite and infinite are contradictory *adjectives* referable to the physical world, no *a priori* reasoning can decide for one adjective as against the other. Physical science, alone, is potentially able to settle the question, and the day has not come when this question can be empirically

settled. I would, however, like to call attention to certain points.

The principle of the conservation of energy does not by itself point in either direction. The second law of thermo-dynamics sets a problem for the course of nature, but does not inform us whether nature avoids it by being infinite or by being able to reverse the process. The truth is that these principles are more intimately bound up with the category of time than with space. They are concerned with processes of change in nature.

If nature be finite, this fact does not mean that it must have a smooth boundary beyond which electrons could not dash. The boundary must needs be dynamic and set *by* nature rather than *to* nature. If gravitation have significance for the minutest parts of nature, its internal pull will determine the "flaming boundaries" of the world. Beyond will be the 'void,' which is perfectly thinkable though not a reality. I mean that the void is a proposition and not a thing. It is an abbreviation for the negative proposition that none of the things we regard as real are present. But, it will be said, can we not ask the question, What lies beyond? Certainly we can. And the void is the denial that anything lies beyond.

A finite universe is therefore quite thinkable. Is the same true of an infinite universe? I must confess that my feeling is that the adjectives finite and infinite apply as contrasts to processes of measuring and numbering rather than to that which is measured and numbered. If so, the universe must have a determinate size at any one time, which may yet be so great that it is practically immeasurable.

Kant held that the reason is obliged to hold, at one and the same time, that nature is both finite and infinite and

that it is therefore the victim of an unconquerable antinomy. The majority of modern thinkers are coming to deny the existence of such an antinomy. The world is either finite or infinite, and the human mind has a valid choice of one to the exclusion of the other.

Is Consciousness Extended?—Consciousness is not a spatial part of the physical world. In other words, it is not a physical thing measurable in terms of a superposable standard. This means that it is not an entity which can exist along-side-of what we can handle and enter into dynamic relations with it. In ordinary language, it does not occupy space. Or, to put it more exactly, it can never be the sole occupant of space. Consciousness is the only part of reality we experience. The physical sciences, on the other hand, give us knowledge about reality, though this knowledge does not exhaust reality, as Descartes assumed and as too many thinkers have taken for granted.

Reflection has convinced us that consciousness is *in* the brain since it cannot be along-side-of it in any realizable sense. But that which is really in the brain as a part of its nature must be spatial. The situation is, of course, unique just as the consciousness-body relation is. Consciousness is not a thing in the brain as a pea is in its shell for it is not that sort of a reality. *To be substantial is to be the whole of reality in any one place, and consciousness is not substantial in that sense.* "Evidently, it is not in the physical as one physical thing is in another, and so to conceive its presence in the brain properly, we must revise our unduly limited notion of what 'being in a thing' may mean."

Consciousness is experienced as a continuum; and we must hold that this changing continuum, which is the changing field of the individual's experience, penetrates

that part of the cortex which is functionally active at any one time. Yet consciousness is the only part of the content of the cortex which is given. In it we are consciously reality and it is, moreover, the only part of reality that we consciously are. Its setting, or that in which it is immersed, can be known about only by means of propositions present in itself. Hence, the statement that consciousness is extended is inferential knowledge about it due to knowledge about the substantial reality, the brain, in which it arises and plays its rôle. Such inferential knowledge about consciousness must not, however, conflict with consciousness itself as given. But, rightly interpreted, it does not do so since it only informs us where consciousness is and makes no assertion about any empirical feature of consciousness which conflicts with consciousness as it is given.

But the presence of consciousness in the cortex, continuum as it is, gives us an insight into the brain which is of immense importance. The brain, itself, must be a functional continuum and the old, external atomism a myth. And we realize now, as Descartes did not, that space is but a preliminary category which needs filling out by all the knowledge about the structure, organization, and modes of activity of different parts of reality that we can gain.

References

Couturat, *L'infini Mathematique*, pt. 2, bk. 4, chap. 4.
Fletcher, *Introduction to Philosophy*, chap. 31.
Fullerton, *Introduction to Philosophy*, chap. 6.
James, *Principles of Psychology*, vol. 2.
Kant, *Critique of Pure Reason, Transcendental Dialectic.*
Mach, *Space and Geometry.*
Russell, *Principles of Mathematics*, vol. 1.
Sellars, *Critical Realism*, chap. 9.
Taylor, *Elements of Metaphysics*, bk. 3, chap. 4.

CHAPTER XVIII

TIME

About Time.—No category has had more apparent contradictions and difficulties connected with it than has time. Poets have united in making it one of the chief mysteries of the world. As one writer has phrased it: "All things live in time and it lives in nothing; all things die in time and death is not able to attain it." But may it not be that it is this mystical tendency to make a thing out of time that leads thought into difficulties? Let us examine time concretely, much as we did space, to see what it really is.

Three Kinds of Time.—For our purposes it will be sufficient briefly to discuss three kinds of time, perceptual time, mathematical time, and time as a category. Perceptual time is the experience which serves as the foundation for the conceptual time of mathematics, while time as a category of the physical sciences concerns the kind of knowledge about nature which can be classed as temporal.

Perceptual, or Personal, Time.—The elementary experience which is at the foundation of what we roughly call time is the immediate sense of change. When we listen to a factory whistle, we note its rise and fall, its variation in intensity, its increase or decrease in shrillness. Such apprehension of change in ourselves and our surroundings is a universal and constant experience.

But the sense of change is only one of the elements

which reflection can distinguish in perceptual time. Just as important is the feeling of duration or lapse of time. All persons have the ability to estimate the duration of a process or activity to which they have been attending. It is the task of the psychologist to explain the conditions of this sensing and estimation of duration. The probability is that it is connected with certain rhythmical aspects of consciousness and with what may be called the cumulative effect of attention. "When we are listening to a sound, our experience is different at the end of one minute from what it is at the end of two minutes, although the sound itself may not have altered in quality." Stout, *Manual of Psychology*, p. 386. Thus there is a qualitative difference in consciousness from moment to moment which adds a differentia to the sense of change and complicates it.

In personal time, then, we have the sense of change and the feeling of duration. This sense of the lapse of time fits in with the feeling of duration as its complement. But along with the sense of change, there is usually present an apprehension of the order of the changes. A precedes B. The visit of the postman usually occurs before dinner. This relation of sequence between events is the characteristic order which distinguishes time from space. In space, we have objects which are in the order of co-existence and the relation of a measurable externality; in time, we note that one event precedes another. I went to class an hour ago; I then went down to the bank; and I am now sitting at my desk writing. Thus I can distinguish my actions and relate them in a characteristic order.

Within personal time, we can contrast the 'now' with the 'just past' and the 'not yet.' This empirical present, which is sometimes called the 'specious present,' is not an

indivisible instant of time but a span of considerable length. In other words, perceptual experience knows nothing of instants of a mathematical sort. We do have the experience of order in change, of this event as preceding that. Two successive notes of music may be sounding in my ear at the same time and yet be experienced as successive. But memory and expectation raise this contrast into one between the order of complex events which can only be conceived. The stability and scope of our time-meanings, the past, the present and the future, depend upon the supplementation of perceptual time by memory and expectation with the mental objects which go with them. The range of experience outstrips what can be given in perception and the mind can swing from past to future through an orderly series of events. But even this developed time-experience has a direction, is never empty and has the uniqueness of the consciousness of which it is an aspect. Consciousness is not in time; it is temporal.

Perceptual time, which is essentially private, shades into common time. What should be noted is the gradual infusion of a spatial framework due to the needs arising from interpersonal intercourse. Yet we must not jump to the conclusion that such intercourse is alone responsible for this introduction of spatial standards. Direct estimations of duration are soon found to be too dependent upon what are called subjective factors, such as hope and fear, to be trustworthy. Hence the individual finds it natural to resort to orderly changes in perceived things. It is, therefore, in the attempt to get beyond the purely personal character of time-estimation that resort is had to movements which correspond to temporal order and harmonize with the sense of duration.

Thus time gradually got its clues and standards from the perceived world. The result was a commonly accepted chronology. The hourly, daily and yearly movements of the sun were adopted as events to which to refer all other changes. To identify the standardized common time of the clock with subjective time is to commit a profound error. The one is an exactly measurable order; the other consists in the recognition of change and a sense of duration. "Shakespeare tells us that time travels 'in divers paces with divers persons'; Newton tells us that time moves at a constant rate. Shakespeare's time is evidently subjective time, and Newton's objective time." Stout, *Manual of Psychology*, p. 498. But this commonly accepted time is only an order in movement; it is not a thing by itself. As soon as we reflect concretely, we see that there is no mystery about it.

Mathematical Time.—Common time very easily links itself with mathematical space to become mathematical time, infinitely divisible and infinite in extent. Let us observe how this is done. Thomas Hobbes has expressed the transference so clearly and yet so naïvely that I cannot do better than quote his words. "As a body leaves a phantasm of its magnitude in the mind, so also a moved body leaves a phantasm of its motion, namely, an idea of that body passing out of one space into another by continual succession. And this idea, or phantasm, is that which I call time. And yet, when I say time is a phantasm of motion, I do not say this is sufficient to define it by; for this word time comprehends the notion of a body inasmuch as it is first here and then there. Wherefore a complete definition of time is such as this, *time is the phantasm of before and after in motion.*" Movements are best represented symbolically by a line with a direction ——→;

in such a symbol there is a qualitative as well a quantitative aspect. Spatial direction is replaced by the idea of temporal order. The line then symbolizes duration and succession. Thus a finite portion of linear space measures duration, while positions on it, apprehended together and yet thought of as successive, represent temporal order. Mathematical time uses space as its foundation and superposes upon this a different order, that of succession in place of co-existence.

A word of warning at this point may be wise. We saw that to think of perceptual space as really mathematical space disguised is to lay oneself open to all sorts of false problems. Moreover, we convinced ourselves that mathematical space and mathematical objects do not exist outside of consciousness. In the same way, to seek to reduce personal time to mathematical time is to sin against genetic facts and to forget that mathematical time is an abstract construction. Yet when we are not critical enough, we are soon ridden by mathematical time and look for temporal points or moments in our actual flow of consciousness. All time is then conceived by us as infinitely divisible, infinite in extent, homogeneous and empty. I need not emphasize again what a mistake such a belief would be.

Time as a Category of Scientific Knowledge.—We can now push forward to the investigation of the objective validity of time as a category in scientific knowledge. To what characteristic of the physical world does it correspond? What kind of knowledge does it cover? We shall see in this case, even more clearly than in that of space, that knowledge is not an intuition of reality but knowledge about it.

Scientific time is a measurable quantity as well as an order of succession. Some process—preferably a move-

ment—is taken as a standard and other processes are referred to this as a unit. If two processes begin and end together, they are said to occupy the same time. Let us take an example to make this correspondence clearer. Suppose that we wish to know how long a certain chemical process takes to occur. We note the positions of the hands of a clock at the moment the chemicals are put together and also when the reaction ceases. This method means that we seek to measure the one process in terms of the other. This correspondence which is at the basis of the scientific measurement of the temporal aspect of nature is for temporal knowledge what superposition of things is for the spatial knowledge of nature. In both cases, we obtain knowledge in terms of ratios and not in terms of apprehensions of absolute dimensions. Science selects some standard process like the rotation of the earth and adheres to it so long as it can relate other processes to it. "Thus astronomers have come to the conclusion that the earth as a clock is losing at the rate of 8.3 seconds per century and they have given up the earth as their timekeeper and substituted for the sideral time t a certain function $T=\phi(t)$, slightly differing from t, as their new 'kinetic time.'" Silberstein, *The Theory of Relativity*, ch. 1.

The universality of scientific time follows from the singleness of the standard process to which all other processes are referred. When we say that the whole world is in *one time*, we only mean that all processes are potentially referable to this selected standard process. Thus the oneness of time for nature is expressive of the fact that all the processes in nature can be brought into relation with a unit and ratios established.

An interesting result now stares us in the face. The unity of scientific time is really connected with the spatial

unity of the world. In other words, science deals with processes which are localizable with reference to each other just as it concerns itself with things which are directly or indirectly superposable. The spatial and temporal characteristics of nature as science studies them and really understands them are thus most intimately intertwined.

But while scientific time is the measurement of the various processes in nature by reference to a standard process, it retains the idea of order which is characteristic of personal time. And it is this order which differentiates it from space. Yet we can conceive of the physical world as inert, changeless and motionless; for such a world time would have no meaning. But our world is different; it is a world in which changes occur and movements repeat themselves. How fundamental these changes are must be determined by investigation.

Science relates events to one another by means of a chronology. It is knowledge about nature that an eclipse occurred in the sixth century B. C. It is also knowledge that Columbus discovered America in 1492. Such knowledge is, obviously, a knowledge about what no longer exists, but it is knowledge nevertheless, a fact that shows that scientific knowledge is not an apprehension. Is not knowledge about the past knowledge of what no longer exists? So soon as we remember that knowledge consists of propositions in the human mind, the non-existence of the past offers no difficulties.

Change the Objective Basis of Scientific Time.—But what is in the temporal order in nature? The answer is clear. Real time is change or, to put it the other way around, change as cognitively conceived always involves an order of succession. But the identification of real time

with change does not settle all our difficulties. How shall we conceive change? Does change involve an order in nature or only in our valid knowledge about nature? Knowledge about nature is not the same as an apprehension of nature, and we have the right to expect a divergence between the form of knowledge and reality. Let me illustrate what I mean. The scientist furnishes us with knowledge about motion by describing the path traversed and the time-rate of the motion. But the moving body does not carry its path with it. Only man with his memory is able to connect a past position with a present position; the moving body has no such coördinating memory. Thus we see that knowledge about a motion is not the same as the actual motion. Paradoxical as it may seem at first glance, we must say, then, that in nature there is no temporal order of co-existent events but that nature produces events in an orderly sequence and man arranges and dates them. Nature changes, and man orders these changes as known into past, present, and future. But the nature which changes is spatial. If we are not afraid of a metaphor, we may say that the "present" of nature is the reality of the things of which it is composed. The physical world is spatial and the physical world changes. Spatial order and temporal order do not exclude each other. *Instead of nature being in time, time (change) is in nature.*

Had the World a Beginning?—For the sake of completeness, let us consider a couple of characteristic problems usually brought up for consideration in this connection. Had the physical universe a beginning in time? If real time is change in nature, the universe could not have had a beginning *in* time. If it had a beginning, that would be because it was created. But there is no necessity in the time category itself to postulate a beginning. The

student will realize the truth of this conclusion when he remembers that he does not ask himself whether God had an origin in time. Were we to conclude that the physical universe had no origin, no contradiction of the concept of time would be involved. Theoretically, our chronology could be extended from the present into the past indefinitely.

The second problem, Is the physical universe eternal? can be dismissed in a few words since it is on all fours with the first. The empirical data are entirely in favor of the principle of conservation. But if the universe is a spatial system as I have attempted to show, what holds of systems within it holds of the universe entire. Hence, the more data in favor of conservation science secures, the more it urges on us the view that nature is eternal.

Conclusions.—In our analysis of space, we were led to hold that space presents itself to us in a preliminary form which requires for its filling out all the knowledge science can gain of the constitution and internal mode of working of the physical world. To know that the world is spatial is to know comparatively little about it, true as that little may be. To magnify space into a penetrative vision into the very web and woof of nature was Descartes' mistake. Space and time are preliminary categories which are connected with measurement and order, and they find their development and completion in the more special ones which are related to them as the features of a finished picture are to the first rough sketch. While space blossoms out with the increase of scientific knowledge into the categories of dynamic internal relation and organization, time passes over into the categories of change and causality. As we continue our analysis of nature as known to us, we realize, ever more penetratingly, that

space and time, coexistence and change, are inseparable categories. Reality is spatial, and this spatial reality changes.

Consciousness and Time.—Everyone acknowledges that the category of time applies to consciousness as naturally as to the physical world. Consciousness is so obviously a temporal process in which change is a striking feature. Thus the difficulty of establishing a harmony between the categories of the physical sciences and those of the mental sciences does not arise here in the acute form that it did for space. Yet a couple of points need attention.

In consciousness we are witnesses of a genuine change in reality. Each experience that arises is new, and each experience which dies out and is supplanted by another lapses from existence. But in the knowledge about the physical world which the sciences gain, there can be no such presence at the heart of reality. The category of time implies change, but this change is set over against the substantial conservation of physical systems. The result has been that many attempts have been made to hold that change is unreal or else only the shifting of positions on the part of unchangeable atoms. That is, the natural tendency in the physical sciences is to stereotype change and reduce it to a minimum. In contrast to this attitude of the physical sciences, psychology has been forced to stress the element of change and to admit its ultimacy. Consciousness is not a conserved reality and is not therefore a substantial reality. Yet this contrasting application of the category of time in the two systems of science involves no genuine conflict. Rather does it harmonize with the conclusion we reached in the preceding chapter, that consciousness is in the brain in a unique way.

References

Bergson, *Time and Free Will.*
Fletcher, *Introduction to Philosophy*, chap. 32.
Fullerton, *Introduction to Philosophy*, chap. 7.
Lovejoy, "The Place of the Time Problem in Contemporary Philosophy," *Journal of Philosophy, etc.*, 1910.
Taylor, *Elements of Metaphysics*, bk. 3, chap. 4.
Stout, *Manual of Psychology*, bk. 4, chap. 6.

CHAPTER XIX

SUBSTANCE AND SUBSTANTIALITY

The Physical World Consists of Things.—Common sense does not begin with any subtle stuff called matter but with *things*. The physical world is a spatial complex of things having determinate, though often changing, positions and excluding one another. Some of these things are more clearly marked out than are others. Living things, especially, seem to be things for nature itself; they have definite outlines and act more as a whole than do other things. But this contrast is, after all, only a relative one from the present point of view. *The main fact to be emphasized is that the physical world is, at first, as it appears, a variegated panorama of heterogeneous things.* To speak of matter at this stage is, therefore, misleading. The material world of common sense is not a world composed of matter but a world of concrete physical things. It is the world as perceived. Yet I do not doubt that the pervasive influence of Natural Dualism, heightened by science, makes itself felt to-day. The physical world is what I see *out there* in contrast to what I feel and will *in here*. It is this dualistic antithesis, as much as anything which we ordinarily have in mind when we speak of the physical world as material.

The More Abstract Idea of Matter.—The more abstract idea of matter was the creation of philosophy and science working sometimes along the same lines, sometimes along different lines. Very early the attempt was made to

reduce the perceptible heterogeneity of things to homogeneity. Some of these attempts were extremely daring although not well thought out. Thus Thales proclaimed that all things are water. But how can this asserted homogeneity be reconciled with the given heterogeneity of things? To say that these are states or forms of water leaves us with the problem of the relation of forms to the one stuff which is more fundamental. Are these forms penetrative changes of the one stuff? Or are they more of the nature of appearances? Such questions were not faced at first. Then came the atomists with a more sophisticated solution of the relation of given heterogeneity with actual homogeneity, a solution which still enthralls the human mind. The atomists were *eleatics*, that is, they did not believe in the reality of change. They were forced to make a slight concession to perceptible fact, but they made it a compromise in which nearly all of eleaticism was retained. Atoms are homogeneous and changeless; it is only their spatial positions which vary. *The relations between atoms are external* and do not affect the nature of these particles at all. I think that the student will realize that this solution has had a perennial appeal and appears in a hardly veiled form in what is called the mechanical theory of the universe. Even the less doctrinaire scientist thinks of electrons and atoms as less affected by change than are the spatial relations into which they enter. Later we shall enquire why this is; just now we must accept it as an actual tendency.

Along with the view that the physical world is composed of changeless particles, went the distinction between appearance and reality. The real material world consists of homogeneous elements which are known by means of a conceptual intuition. In the case of eleatic atomism, we

may rightly say that the metaphysics determined the epistemology rather than the reverse. And, as we have pointed out so often, the inevitable result is bad metaphysics and bad epistemology, however subtle and attractive. The atomists developed their ontology and drew the conclusion that, since these atoms could not be perceived, they must be directly known by reason. We must think of such a reason as a power of apprehending realities which cannot be present to sense. *We may call such a position a rationalistic translation of Natural Realism.* Knowledge is apprehension, yet not by sense, which is deceptive, but by a more penetrative power of cognition. To know the real world is the function of reason. Or, to put it more correctly, since we apprehend the real world, there must be a rational faculty different from, and cognitively more adequate than, sense. This situation gives us a new clue to the vicious traditional contrast between sense and reason. From this angle, it is not a distinction founded on psychology and logic but upon a deduction from a metaphysical position.

Now the atomist knew his world as consisting of unchanging, homogeneous particles the relative positions of which in the void alone change. But the problem of accounting in some measure for the perceptual world remained. Only two factors for the purposes of such an explanation were at hand, the real physical world and the percipient with his faculty of sense. On the side of the real world, the differences which could be connected with the qualitative heterogeneity of the perceptual world of things were the number of elements in a complex and their relative positions; on the side of the percipient the important fact was the distorting nature of sense. The obvious deduction was that the only change in the real

world was a change of position of particles in a complex and that such a change was correlated with a change of appearance in the perceptual thing, the faculty of sense remaining distortive in a sort of lawful way. We may summarize the outlook in the following terms: atoms and a void; external relations which are only positions, not genuine relations; objective change only a change of position; a distorting faculty of sense; heterogeneous perceptual things.

Accompanying the distinction between atoms and things of sense was the separation of the primary from the secondary qualities. This separation has often been misunderstood. The primary qualities are, of course, extension, shape, and impenetrability; the secondary, color, flavor and odor, etc. Both lists have varied somewhat from time to time. For eleatic rationalism, these primary qualities are only distinguishable aspects of atoms as apprehended by reason. The atom is not something which possesses them; the atom is apprehended as extended, hard, figured and mobile. Such is matter for this strict form of realistic rationalism. It is a homogeneous stuff intuited as having these aspects.

What, then, are the secondary qualities? They are aspects of perceptual things, of things seen by sense instead of by reason. Since the causal, or physiological, theory of sensation is usually held, these secondary qualities are often spoken of as mental effects in the percipient, a phrase which raises the whole mind-body problem. But if the secondary qualities are effects, what are the primary qualities? Obviously, it is held that rational apprehension is a mystery; it is an unaccountable embrace of reality by the mind, to use the phrase of a distinguished American thinker. But perceptual things, also, have pri-

mary qualities or something very like primary qualities. The primary qualities seem to be somehow common to sense and reason. This fact suggests that sense does not altogether distort or that it is not so sharply different from reason as at first supposed, suggestions which have caused much controversy in rationalistic circles.

Descartes and Locke.—For Descartes, matter is substance and its whole essence and defining attribute is extension. "Matter alone has substantial reality, space being 'by a distinction of reason' conceived as its attribute." Smith, *Studies in the Cartesian hilosophy*, p. 66. Descartes taught that matter is transparent to our minds and is exhaustively known in conception. Hence, it is known to be alien to mind. His position is scientific realism though there is nearly always a little more agnosticism in scientific realism than in Cartesianism. I am sure that modern scientists doubt that their knowledge exhausts matter. But there is an interesting difference between Descartes and the atomists. The atomists admitted a void and believed in discontinuity. In other words, atoms had position but no real connections. Descartes denied a void and believed in continuity. We shall have occasion to discuss this difference in the light of modern science.

It will be remembered that John Locke attacked rationalism and broke down the distinction between sense and reason. But he desired to reconcile his view with Newtonian mechanics. Hence he adopted a position which may rightly be called representative perception. The primary qualities of perceptual things are copies of the primary properties of a material substance. This substance which underlies and supports the primary properties is an unknowable. The agnosticism which ancient rationalism

avoided appears in Locke in an extreme form. As we pointed out a little while ago, it was this unknowable matter which Berkeley destroyed by his arguments.

Empirical Things and Their Attributes.—When logical distinctions lead into blind alleys, it is always best to return to experience and try to make a new analysis. Let us see whether we can give another setting to substance.

Man perceives things as complex while yet somehow one. An apple, for instance has a certain size, a certain shape, a characteristic odor, a definite weight, etc. It is *one* apple, and this one apple has various qualities which can be sensed at different times according to the sense-organ that is stimulated. We apprehend the object as one while we note and refer to it one quality after another. It is this empirical fact of oneness and complexity which has given rise, through a misinterpretation, to the distinction between a possessing substance and the properties possessed. But the actual fact is that common sense thinks of the concrete thing as the subject of the properties. And this concrete thing is not something unknowable back of the properties. It is not something in any way opposed to the qualities. It is evident that we must ask ourselves what we mean by things.

Empirical things are what we perceive. They *are*, therefore, all those aspects which we can distinguish. But these apprehended objects are thought of as independent of ourselves, permanent, having a life, as it were, of their own, and the seat of powers of various sorts. At the level of Natural Realism, these meanings are combined pretty successfully with the objects perceived, the result being a thing. Certain striking aspects of perceived objects unite intimately with these meanings. Physical things are spatial and massive and centres of energy.

The more, then, that we know about the properties of things, the more we know about the things. They are revealed in their qualities and properties. Common sense is not agnostic though it is inclined to admit that there is much more to a thing than what is actually revealed to human beings. Things are substantial but they do not consist of an unknowable core somehow possessing attributes. On the contrary, I cannot help feeling that they are conceived largely in terms of our own life as visible centres of agency whose depths are yet hidden from us. It is only as science advances toward a facile mechanicalism that the mysterious depths are lost sight of and the whole nature of the thing is seen as a shifting of conceptually apprehended aspects. But if we reduce the thing to these aspects, as does rationalistic realism, all source of agency is removed as Berkeley pointed out. The physical world becomes dead and inert to the intellect, and the philosophical consequence has always been either dualism or a reaction in favor of spiritualism. I mean that science has sometimes led to a surface view of nature because it has persuaded itself that it has exhausted nature, whereas it has only gained the sort of knowledge about nature that physical science can achieve. But the identification of nature with abstract conceptual systems has been the failing of rationalistic realism from the beginning.

But if man is a genuine part of nature, nature must be a much more complex, rich and profoundly real thing than we have sometimes supposed. If man has evolved from nature, his presence casts light back upon it. It must be the sort of thing that could produce him. It must be kin to him. It is apparent that evolutionary naturalism is far removed from Cartesian rationalism with its belief that mathematics lights up nature and exhausts it.

Knowledge-About vs. Being.—Let us now apply our theory of knowledge to the age-old question of matter and substance. We have decided that there is no justification for Locke's unknowable substance lying back of, and possessing, primary qualities which are like our ideas. In like manner, we have rejected the matter of apprehensional rationalism. We do not apprehend reality but only gain knowledge about it. Being is one thing, and knowledge is quite another and a human affair. And he who confuses being and knowledge and does not realize their fundamental difference is apt to be led into all sorts of unreal difficulties. *But all apprehensional realisms are almost sure to do this, for the content of knowledge is for them the actual independent world or being.* We, however, have realized that knowledge is other than being, though genuine knowledge and as revelatory of being as knowledge can be. Our conclusion, then, must be that being is matter and substance. It is matter, not as a passive homogeneous stuff that can be apprehended by the mental eye, but as reality; it is substance, not as an unknowable possessor of knowable attributes, but as the metaphysical subject to which all tested knowledge is referable.

We have sometimes dealt rather harshly with objective idealism on the epistemological side. It gives us pleasure, therefore, to point out that modern objective idealism has usually insisted upon the distinction between human knowledge and reality. It has never taken the mechanical view of the world as seriously as rationalistic realism has. It has usually refused to identify any pet conceptual scheme with reality. On the other hand, it has been more than inclined to refuse to take scientific knowledge seriously as knowledge about reality. It has been anti-scientific in its metaphysics.

Nature Is Substantial.—We have learned to use nature, matter, reality and the physical world as synonymous. When we assert that nature is substantial, we mean that it is permanent, independent of anything else, and self-existent. In other words, we think of it as reality.

We have already seen that reality is known as extended and as containing change. But we realize that these two categories form only the framework of the more detailed knowledge which the sciences achieve. The task of the philosopher is to study this detailed knowledge to discover what nature is known as at the level the sciences have now attained. He must call all the sciences to counsel, the exact sciences, the biological sciences and the mental sciences. All tell us about reality and their informations should not conflict. It is his function to see how they can be harmonized by means of a comprehensive view of the world. Thus our position can be described as a naturalistic monism based on a non-apprehensional theory of knowledge.

Properties Express Knowledge About Nature.—The vast majority of the properties of things are statements of what a thing conditions or does under definite circumstances which are supposedly reproducible. They are what Locke called 'powers.' This behavior rests on the nature of the thing as well as on the total conditions and is therefore an index of its nature. But we must not think of this nature as something divisible into entities called properties. *Properties are propositions formulated in a human way and referred to things as containing knowledge about them.* Science can never offer us literal aspects of the physical world. The habits and prejudices founded on Natural Realism and rationalistic realism with their apprehensional views of knowledge have prevented phi-

losophy from understanding the actual knowledge gained by science.

Let us interpret the 'secondary' qualities of perceptual things in this way. The color we see is a function of the nature of the light which strikes the eye and of the cerebral system. It gives us knowledge about both in their relation to one another. When we trace the light farther back to the reflecting body, we secure knowledge about its differential action to light vibrations. Taste, odor and sound can be treated in the same way as sources of knowledge about things and about the organism.

The so-called primary qualities of perceptual objects must be interpreted in exactly the same way. The size of an object as perceived is a function of the physical thing, its distance from the perceiving organism, and the part of the organism involved. The same analysis holds of weight. None of these features of the perceptual thing must be naïvely objectified. Berkeley was right here as in so much else.

Constant Properties.—It will be better for us to discard the expression, primary qualities, and adopt the term *constant properties*. There are certain classes of judgments which can always be made of bodies and which, therefore, give the defining concept of the physical world from the point of view of the physical sciences. A body always has mass although it is not always chemically active; it always has volume although it is not always optically active; it always has some internal structure although it may not be doing work. These constant properties give us a general knowledge always referable to reality. In constrast to these, the other properties may be spoken of as "powers." Powers are expectations based on knowledge whose conditions are not always present. Constant properties need

no conditions for their realization. Thus we obtain genuine knowledge about the real size of a physical thing by means of measurement. What is obtained is a *ratio* in terms of some unit. Such a ratio is obviously not an inherent quality, not an apprehensible feature, but knowledge-about. Let us examine mass because this is so evidently not a perceivable aspect.

When impact experiments upon bodies were made, it was found that the change of velocity of one body had a constant relation to the change of velocity of a second body. In his interesting little book, *The Constitution of Matter*, Professor Ames writes as follows: "So here in the case of these impact experiments, let us call the change in the velocity of one body by the symbol c_1, and that in the velocity of the other c_2, and remembering that their ratio $\frac{c_1}{c_2}$ is always the same for the same two bodies, we can give arbitrarily a number m_1 to the first body and then define the corresponding number for the second body to be given by a number m_2 such that

$$m_2 = m_1 \frac{c_1}{c_2}$$

This gives us, then, a definite number for the second body. Let us see what property of the body this number measures. It is evident from the definition that, if the change in the motion of the second body is small, the value of m is large, and *vice versa;* so that the size of m corresponds to the opposition offered by the body to having its motion changed; this property is what we think of when we speak of the 'quantity of matter' in a body, and it was called by Newton its 'mass.'" It is evident that mass is knowledge about matter. Could anything harmonize better than this does with our theory of knowledge?

Matter for Physics.—Matter for physics is matter as known by physics. The other natural sciences should be able to gain further knowledge about matter, but, of course, their additional knowledge should not conflict with this basic preliminary knowledge. Unfortunately, too many thinkers have gone to the extreme of maintaining that any further knowledge should be reducible to the world as known by physics. Such an extreme is, in effect, the materialistic view of the world.

In a recent book an eminent physical chemist asserts that there are, for modern science, three fundamentals, mass, energy and electricity. The problem is how to harmonize our knowledge of nature along these three lines so as to see them somehow together. Recent investigations seem in a fair way to lead to an explanation of mass in terms of electricity. Electricity would, if this attempt succeeds, be the elemental stuff which, organized together, makes the physical world at its various evolutionary levels. But this stuff is not inert or passive as was the conception of matter for the seventeenth and eighteenth centuries. It is through and through dynamic and each particle has an infinite sphere of influence. It is possible to regard real space or the physical world as the dynamic continuity of electricity. But what is electricity? We can't perceive it. We can only gain knowledge about it by the way it acts. Here, again, science is coming, in its own way, to a non-apprehensional realism, as against the intuitive realism which dominated it for so long. Could a philosophy desire a better confirmation of its epistemological speculations?

What Is Energy?—A changeless world would be a world in which no work was done in and by physical systems. This fact leads one to connect energy with

real time or change in nature. Energy, like mass, is a quantity which gives knowledge about matter. We must always remember that the energy of which science speaks is properly a measurable quantity and not a stuff which is intuited. If electricity is the physical name for matter, then energy and mass are terms which refer to definite forms of knowledge about it. Both are properties of matter and not matter itself. We should not follow the lead of Ostwald and make energy an ontological term, a sort of primary stuff which has various forms. That would be a return to the vague epistemology and metaphysics of Thales.

References

Ames, *The Constitution of Matter.*
Locke, *Essay on the Human Understanding.*
Marvin, *A First Book in Metaphysics,* chap. 15.
Ostwald, *Vorlesungen über Naturphilosophie.*
Sellars, *Critical Realism,* chaps. 2 and 9.
Soddy, *Radioactivity.*
Thompson, Art. "Matter" in *Ency. Britannica.*
Weber, *History of Philosophy.*

CHAPTER XX

MIND, SOUL AND CONSCIOUSNESS

The Nature of Mind a Problem.—We should not be surprised by now to discover that terms very freely used have around them fringes of vagueness. These terms indicate distinctions which are valid and necessary but have not been thought through systematically. Thus we have just seen that people speak of matter and the material without having much more in their thoughts than the conviction that they can see physical things and that these occupy space and are in causal relations among one another. But we have come to the conclusion that the objects we perceive are really mental contents which have no existence outside of the consciousness of the percipient. Reflection, guided by science, disrupted Natural Realism and led step by step to the view that we can know the physical world only in terms of propositions. It follows that we cannot apprehend the stuff of nature and *that even such an ideal is meaningless.* It is evident that such a conclusion modifies greatly the meaning of the term matter. No longer does it have the stiff externality that it once had. While not ceasing to be matter, it has ceased to be material in the old dualistic sense as something seen to be opposed to mind. For us, matter is fuller of content than ever, fuller of potentiality and depth, less abstract even though not perceptual. It has often been maintained that a critical realism strips nature of many qualities and makes it barer than it is for naïve realism. Apprehensional

realisms do have this consequence as they become more critical, but not so with non-apprehensional realism. We are bringing nature nearer to our human nature even though we strip it of such gauds as color and perfume. We must no longer think of nature merely in terms of our senses. Our senses are only instruments.

We shall see that a parallel development for the term mind has slowly been taking place. At first, mind was thought of as almost a perceptible reality, not so very different from empirical things. It took a long time to pass from this external mind, or soul, to a more adequate sense of the processes of willing and feeling and thinking which make up the psychical life of man. The interesting historical fact is that, as man deepened his concept of himself, he withdrew from nature and established a dualism. Religion has had something to do with this but a mis-interpretation of science has also been to blame. With the advent of the theory of evolution, there has, however, been a swing in the opposite direction. Philosophy is now seeking to bring mind and nature together in a critical way.

Primitive Notions of Mind.—Primitive man conceived the mind almost materially. He thought of it as a thing among other things, distinguishable from them only by its subtlety. He gave it substantiality in its own right. "The belief most widely current among the peoples of lower culture is that each man consists, not only of the body which is constantly present among his fellows, but also of a shadowy vapour-like duplicate of his body; this shadow-like image, the animating principle of the living organism, is thought to be capable of leaving the body, of transporting itself rapidly, if not instantaneously, from place to place, and of manifesting in those places all or

most of the powers that it exerts in the body during waking life. Sleep is regarded as due to its temporary withdrawal from the body; trance, coma, and other serious illness, as due to longer absence; and death is thought to imply its final departure to some distant place." McDougall, *Body and Mind*, p. 1. Here we have a full-fledged dualism. The soul is just as substantial as the body though different from it.

The primary idea of our primitive ancestors was that of a ghost-soul or semi-material spirit which possessed, or was the seat of, various powers. So far as mind was used as a term for thinking and willing, it was thought of as somehow connected with this ghost-soul. Of course, this assignment was no genuine explanation but it passed for one at this level. Early man sought to find a thing *which was like physical things and yet different from them* in order to make it the source and foundation of his own peculiar powers and capacities. He felt that only things are real and substantial enough to account for actions and changes. It was the same motive that made scientists a few generations ago speak of a magnetic fluid and of heat as a caloric substance.

"Two things seem chiefly to have determined the form of the primitive belief as to the substance of the ghost-soul, namely, the shadow and the breath. Each man's shadow is an impalpable something which has a certain likeness to the man, and which accompanies him when actively employed, but which disappears when he lies down in sleep or death. And the breath that comes and goes from his nostrils seems bound up with his life, and disappears at death. And language clearly shows the important part played by the ideas of the shadow and of the breath in such words as manes and shade, spirit, *spiritus*,

anima, animus, pneuma, and in similar words of many other languages." *Ibid.*, p. 3.

This semi-material spirit which was conceived as the seat of life and of consciousness was modelled upon the shadow, the breath and the experiences had in dreams. We must remember that early man had no scientific explanations of these phenomena as we have them to-day. He did not know that shadow was due to the interception of light, that breath is air and water-vapor, that dreams are centrally-aroused experiences. He thought that the dead actually spoke to him while he was asleep and that his soul travelled away from the body when he dreamed of going hunting or of visiting his friends. Professor Tylor, a famous anthropologist, has summarized his investigations of primitive views of the ghost-soul in the following words: "It is a thin, unsubstantial human image, in its nature a sort of vapour, film, or shadow; the cause of life and thought in the individual it animates; independently possessing the personal consciousness and volition of its corporeal owner, past or present; capable of leaving the body far behind, to flash swiftly from place to place; mostly impalpable and invisible, yet also manifesting physical power, and especially appearing to men waking or asleep as a phantasm separate from the body of which it bears the likeness; continuing to exist and appear to men after the death of that body; able to enter into, and possess, and act in the bodies of other men, of animals, and even things." Tylor, *Primitive Culture*, third edition, vol. 1, p. 429. It is obvious that modern spiritism is not so very far removed from this primitive outlook. Do we not hear of people photographing spirits? Do not spirits rap upon the walls of houses and upon tables, and take up their residence in the bodies of mediums? Much of what we

call superstition to-day is the survival of this primitive theory.

Mind in Ancient Philosophy.—Thus far we have used the terms mind and soul almost interchangeably. Our excuse must be the historical one that for a long time they were so used. Even the Greek and Roman philosophers hardly distinguish between the two. "Thus, Anaximenes of Miletus, who lived in the sixth century before Christ, says that 'our soul, which is air, rules us.' A little later, Heracleitus, a man much admired for the depth of his reflections, maintains that the soul is a fiery vapor, evidently identifying it with the warm breath of the living creature. In the fifth century B. C., Anaxagoras, who accounts for the ordering of the elements into a system of things by referring to the activity of Mind or Reason, calls mind 'the finest of things,' and it seems clear that he did not conceive of it as very different in nature from the other elements which enter into the constitution of the world.

"Democritus of Abdera (between 460 and 360 B. C.), that great investigator of nature and brilliant writer, developed a materialistic doctrine that admits the existence of nothing save atoms and empty space. He conceived the soul to consist of fine, smooth, round atoms, which are also atoms of fire. These atoms are distributed through the whole body, but function differently in different places—in the brain they give us thought, in the heart, anger, and in the liver, desire. Life lasts just so long as we breathe out such atoms." Fullerton, An *Introduction to Philosophy*, pp. 101–2.

But it was not these early thinkers only who thought of the mind materially as being fire atoms or some such *spatial thing*. The Epicureans and Stoics were just as

materialistic in their thinking. "To the Epicureans life is mere juxtaposition of atoms, which accident has combined, and some other gust of accident will part; to the Stoics every form of being is an expression of the cosmic power, an energy correlated to all other manifestations of energy, among which it takes place." Rendall, *Marcus Aurelius Antoninus to Himself*, Introduction, p. 53. In the Stoic system we have a vague dynamic materialism.

Plato's view of the soul reflects his metaphysics. He was a rationalist and held that the mind apprehends "ideas" which are eternal and immutable. These ideas are more like concepts than like perceived things. Thus there emerges in Plato a rationalistic dualism between the changing things of space and the real, or intelligible, world of ideas. The soul partakes of this intelligible, non-spatial world opposed to matter. As a result of Plato's dualism, there arose the conception of immaterial realities, and these immaterial realities were often given dynamic powers to operate within the material realm. But does this not make them material? How can we get the soul and the body together if they are entirely alien to one another? Is not Plato only hypostatizing mental objects which exist in consciousness? That is the conclusion to which we have come. He is thinking the soul in terms of conceptual objects instead of in terms of perceptual objects.

Aristotle saw the difficulties confronting Plato's dualism and did his best to avoid them. The consequence is that he combines soul and body, form and matter, together so intimately that they seem inseparable aspects of one thing. Some of his peripatetic successors dropped back into materialism.

Under the influence of mystical, religious motives the soul gradually becomes more and more non-spatial and

intangible. The words used are negative and abstract. It is generally supposed that Plotinus was the first to describe the soul as an immaterial substance. But this immaterial substance must somehow be brought into relation with the physical body. In his effort to bring the non-spatial into touch with the spatial, Plotinus resorts to expressions which violate all our conceptions of spatial relations. "Thus the soul is present not only in the individual parts of the body, but in the whole body, and present everywhere in its entirety, not divided among the different parts of the body; it is entirely in the whole body, and entirely in every part." When we examine this teaching closely, we see that Plotinus is trying to get the soul and the body together without materializing the soul. "What he tried to do is clear, and it seems equally clear that he had good reason for trying to do it. But it appears to us now that what he actually did was to make of the mind or soul a something very like an inconsistent bit of matter, that is something in space, and yet not exactly in space, a something that can be in two places at once, a logical monstrosity. That his doctrine did not meet with instant rejection was due to the fact, already alluded to, that our experience of the mind is something rather dim and elusive. It is not easy for a man to say what it is, and, hence, it is not easy for a man to say what it is not." Fullerton, *An Introduction to Philosophy*, p. 104.

Mind in Modern Philosophy.—We find the problem which puzzled Plotinus still occupying the attention of philosophers in the seventeenth century. Descartes defines mind as thinking substance and contrasts it with matter as extended substance, and he, also, is compelled to contradict himself when he brings the two together in the brain. He is more literal than Plotinus and locates the

soul in the pineal gland. There it sits and controls the movements of the animal spirits of the brain. But a moment's reflection convinces us that the soul must be in space and spatial if it is to have a definite location. Needless to say, Descartes' solution secured few followers.

But the notion of a substance, that is, the thought of something permanent and self-identical which underlies mental and physical qualities and possesses them in some mysterious way, was criticised by John Locke and rejected by both Berkeley and Hume. John Locke admitted the possibility of materialism. He writes: "It is not much more remote from our comprehension to conceive this than to conceive that God should superadd to matter another substance with a faculty of thinking; since we know not in what thinking consists nor to what sort of substances the first eternal thinking Being has been pleased to give that power." In other words, Locke realized that an underlying substance is an unknowable and saw that one such unknowable substance is much the same as another. I cannot forbear quoting another passage from Locke which shows his vigorous common sense along with his bewilderment. "Every one finds in himself, that his soul can think, will, and operate on his body, in the place where that is; but cannot operate on a body, or in a place an hundred miles distant from it. Nobody can imagine that his soul can think or move a body at Oxford, whilst he is at London; and cannot but know that, being united to his body, it constantly changes place all the whole journey between Oxford and London, as the coach or horse does that carries him." *Essay*, Bk. 11, Chap. XXIII, sec. 20.

Consciousness Displaces Soul.—The student of philosophy and psychology is always impressed by the recent,

rapid displacement of the soul by consciousness. It will be remembered that Hume, rejecting both an unknowable material substance and an unknowable immaterial substance, proclaimed that we experience only our perceptions. In the nineteenth century there arose what has aptly been called a psychology without a soul. Rational psychology had much to say of the soul, mostly in Platonic terms, but empirical psychology concerned itself with states of consciousness and their relation to the nervous system. The soul-body relation of previous philosophy was in a fair way to become a consciousness-brain relation. The term soul has largely been left to theology and to popular verbal thinking. William James put the logic of the situation very well in his Hibbert Lectures: "Yet it is not for idle or fantastical reasons that the notion of the substantial soul, so freely used by common men and the more popular philosophies, has fallen upon such evil days, and has no prestige in the eyes of critical thinkers. It only shares the fate of other unrepresentable substances and principles. They are without exception all so barren that to sincere inquirers they appear as little more than names masquerading—Wo die begriffe fehlen da stellt ein wort zur rechten zeit sich ein. You see no deeper into the fact that a hundred sensations get compounded or known together by thinking that a 'soul' does the compounding than you see into a man's living eighty years by thinking of him as an octogenarian, or into our having five fingers by calling us pentadactyls. Souls have worn out both themselves and their welcome, that is the plain truth." *A Pluralistic Universe*, pp. 209–10.

We can understand now why the term mind has always been so vague and indefinite. For a long time, it was used as essentially synonymous with soul and spirit. It was

regarded as a thing which was in many ways like the things seen about us yet different from them because more subtle and less perceptible. The soul could enter or leave the body and was the seat and source of will and thought. The evolution of the idea of the soul for a long time did not consist in a criticism of this outlook but only in a dematerializing of the content of the ghost-soul, making it, on the one hand, more an unknowable and, on the other, more closely associated with mental processes. It was, in fact, not until the rise of modern philosophy with its criticism of both Natural Realism and unknowable substances that the very assumptions of the older view were challenged. The rise of psychology and the growth of physiology completed this re-orientation. Soul drops out of philosophy and is replaced by the terms mind and consciousness. And of these two, consciousness has, until recently, had the more definite meaning.

Mind and Consciousness.—As we shall see in the next chapter, consciousness and mind were used as practically synonymous terms during the reign of introspective psychology. Yet there were many who felt a secret dissatisfaction with such an identification. The mind and the self seem to be something more continuous than consciousness. Is consciousness self-sufficient enough to answer the demands put upon it? It comes and goes, increases when we awaken in the morning, decreases when we sleep at night, vanishes under an anæsthetic or under a stunning blow on the head. In short, is consciousness able to absorb all the meaning of the term mind? We speak of a man's personality. Do we mean his consciousness? We say that an individual has certain mental and moral traits. Do we identify these with his consciousness? We remark that a student has a good mind and brilliant natural capacities.

Do we mean to refer simply to his consciousness? We say that his present ideas are determined by his past experience. How does this past experience exist? Modern eugenics considers mental and temperamental characteristics inheritable. In what form is this inheritance transmitted? In all of these cases, we know that we are dealing with something revealed in consciousness and closely connected with it and yet with something which indicates a larger setting than consciousness. To secure an answer to these questions, we shall now turn to modern biology and psychology and examine their data and concepts in the light of our epistemology and metaphysics. Mind may turn out to be a category referable to the organic level of nature and as objective as any other. It may correspond to observable types of response and to the types of control and activity implied by them. In this case, mind is knowledge about organic bodies supplementary to that gained by the other sciences but no less genuine.

References

Hume, *Treatise of Human Nature*, pt. 4.
Fullerton, *An Introduction to Philosophy*, chap. 8.
James, *A Pluralistic Universe*, lecture 5.
McDougall, *Body and Mind.*
Tylor, *Primitive Culture.*

CHAPTER XXI

REFLECTIONS ON PSYCHOLOGY

The Subject-Matter of Psychology.—We naturally turn to psychology for information about consciousness and mind. If this science cannot define its terms and state its subject-matter, the task laid upon the philosopher would seem to be harder than he can accomplish. Philosophy and science must coöperate if man is to secure a fairly satisfactory solution of general problems. At present, we want to know what the methods and results of psychology are as a natural science giving knowledge about the world we live in. If these are definite, we can go on to interpret them in the light of the epistemology we have worked out.

Classic psychology was built up around the method of introspection and had no doubt that the reality to which the knowledge so achieved was referable was 'consciousness.' But of late, with the rise of comparative psychology and the closer alignment of psychology with biology, this assurance has been departing. "There is evidence at present of a pronounced disposition to pause for a consideration of fundamentals. What is psychology anyway, —what is its subject-matter and what are its methods? The stock definition that it is concerned with ' the description and explanation of states of consciousness as such,' states of consciousness being something which everybody knows and nobody can define, has fallen or is falling into disrepute." Bode, "Psychology as a Science of Behavior," *Psychological Review*, 1914. Objective psychology or

psychology as a natural science, it is said, studies behavior, and behavior is something observable. The reactions of the white rat which goes through a specially prepared labyrinth are data which are open to all in exactly the same way that the reactions of chemicals in a test-tube are. The older psychology was less concerned with behavior and more with the characteristics of mental processes and their conditions as determined by introspection. The demand facing the modern psychologist is to do justice to all the investigations which can properly come under his science and to work out a point of view which harmonizes them.

Orthodox Psychology.—Let us begin with a typical orthodox definition of psychology. "Psychology may be defined as the science of mental processes. Each of the three terms included in the definition requires a brief explanation. A *process* is any object of scientific knowledge which is not a 'thing.' A 'thing' is permanent, relatively unchanging, definitely marked off from other things. A process is, by etymology, a 'moving forward.' It is a *becoming something*,—a continuous operation, a progressive change, which the scientific observer can trace throughout its course. . . . A mental process is a process in the origination and continuance of which we are ourselves necessarily concerned,—a process the nature of which is determined by the constitution and functions of an organism, an organized individual. . . . A science is a sum of knowledge classified and arranged under certain general rules and comprehensive laws; it is coherent and unified knowledge." Titchener, *An Outline of Psychology*, pp. 7–8. Thus there has been general agreement among psychologists that the reality their science is concerned with is the consciousness of particular individuals.

"Mental facts, or facts of consciousness, constitute the field of psychology." Angell, *Psychology*, p. 1. Its facts must have reference to the experiences of individuals. Thus consciousness has become a term for the changing field of the individual's experience, and this field is admittedly complex and differentiated. We have learned to distinguish percepts, concepts, judgments, pleasures and pains, memories, imagination, volition, reasoning, degrees of attention, etc. These are distinguishable, or logical, parts of consciousness and are carefully studied by the psychologist. It is obvious that the theory of knowledge at which we have arrived confirms this view of consciousness. For us, the individual is confined to his consciousness and his knowledge, which he refers to a realm outside of his consciousness in the case of the physical sciences, exists as propositions in his consciousness.

The Purpose of the Psychologist.—If the whole of the individual's experience is in some sense the subject-matter of psychology, the question still arises, What is the purpose of the psychologist? What does he want to know? It is fairly obvious that he does not want to know *what* a particular individual knows or remembers or perceives or feels. His explanations "consist chiefly in showing (1) how complex psychical conditions are made up of simple ones, (2) how the various psychical groups which he has analyzed grow and develop, and finally (3a) how these various conscious processes are connected with physiological activities, and (3b) with objects or events in the social and physical world constituting the environment." Angell, *Psychology*, p. 3.

An examination of the topics taken up in a typical treatise on psychology will make this purpose clearer. First of all, perceptions are analyzed into sensations, which

are distinguishable presentations. These sensations are studied and connected with the stimulation of the sense-organs. He finds that "there are but forty or fifty different sorts of nerve ends from which all the varieties of our conscious qualities are derived." Pillsbury, *Essentials of Psychology*, p. 98. He then goes on to study the varying intensities of these sensations and to determine as nearly as he can the conditions of this variation. Again, the psychologist discovers that selection or control is a striking fact of consciousness. "A man is not absolutely under the domination of habit, of external stimulation, or of the habitual elements in the thinking processes, but can decide for himself, within limits, what he shall hear or see, what he shall think or what he shall do." *Ibid.*, p. 105. Realizing the significance of this fact, the psychologist proceeds to investigate the internal and the external conditions of consciousness. What control does intensity of stimulation exert? What part is played by purpose, education, past experience, heredity? Next, the psychologist investigates the part played by retention and association in the individual's mental life. How are ideas remembered, and why does one idea bring another in its wake?

These are but a few of the topics discussed by psychology, but they are ample to bring out the purpose of the psychologist. We do have experiences of various kinds. The psychologist does not impugn them nor doubt their worth and significance. What he wants to know is their general conditions. He wants to be able to analyze them into elements and study the laws of the rise of our experiences and the processes involved. For instance, a scientist passes a judgment, say, that the sun is so many million miles away from the earth. The psychologist is not concerned with the truth or falsity of that judgment but with

its conditions as a mental content in the mind of some individual. What processes are necessary before a judgment can be passed? What do concepts develop from? Could we have them without retention and association, without selective purpose and analysis? How are all these conditions related to the brain and to the environment? Such questions are real though they have no direct concern for astronomy. I mean that the truth of an astronomical proposition is unaffected by them. A false judgment has essentially the same *general* mental conditions as a true one.

A Current Paradox.—Both Titchener and James Ward (Art. "Psychology" in *Encyclopedia Britannica*) suggest that psychology has to do with the same experience that the other sciences are concerned with. "It is the same experience all through; physics and psychology deal with the same stuff, the same material; the sciences are separated simply—and sufficiently—by their point of view." Titchener, *A Text-book of Psychology*, Chap. 1. "Paradoxical though it may be, we must then conclude that psychology cannot be defined by reference to a special subject-matter as such concrete sciences, for example, as mineralogy and botany can be; and, since it deals in some sort with the whole of experience, it is obviously not an abstract science in any ordinary sense of that term. To be characterized at all, therefore, apart from metaphysical assumptions, it must be characterized by the standpoint from which this experience is viewed. It is by way of expressing this that widely different schools of psychology define it as subjective, all other positive sciences being distinguished as objective." Ward, *Ency. Brit.*, p. 548, eleventh ed. But this contrast between psychology as subjective and the other sciences as objective is misleading. One science must be as objective as

another. The epistemology at which we have arrived enables us to settle this problem clearly and definitely. All data, laws and theories are within consciousness; but the various physical sciences divide among themselves those data which are referable to the physical world as furnishing the foundation of our knowledge about it, while psychology obtains its data by examining the various phases of consciousness with a view to determining their constitution, conditions and genesis. Consciousness is the seat and source of *all* knowledge, but it is the realm to which psychological knowledge is referred, while the physical world which can never be apprehended is the realm to which the knowledge gained by the physical sciences is referred. It is this view that Ward and Titchener are trying to express. All sciences are objective, psychology as much as physics. All sciences exist only in the minds of human individuals. But the realms to which the physical sciences and psychology refer their knowledge are different. Consciousness is not peculiar and esoteric; it is the only reality we *experience* in contrast to having knowledge about. In orthodox psychology, we have knowledge about that which we experience; in the other sciences, we have knowledge about that which we do not apprehend.

Psychology as the Study of Behavior.—"Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is the prediction and control of behavior. Introspection forms no essential part of its methods, nor is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness. The behaviorist attempts to get a unitary scheme of animal response. He recognizes no dividing

line between man and brute. The behavior of man, with all of its refinement and complexity, forms only a part of his total field of investigation." Watson, *Behavior*, p. 1. That much knowledge of this sort can be gained cannot be denied. It is, moreover, real knowledge about the organism studied and holds in large measure of the species. But the behaviorist studies responses, and in human beings these are often long delayed. The importance of what goes on inside the organism increases with these delayed responses. The objective psychologist is obliged to call them implicit behavior.

The Value of Behaviorism.—Objective psychology developed in comparative work upon animals. "Objective methods are essential to genetic investigation. The proto-esthesia of amœba is radically different from any human experience. To interpret amœba's activity in terms of human consciousness throws no light on either consciousness or behavior. On the other hand, the study of amœba's behavior throws considerable light on the behavior of higher organisms, as Jennings and Loeb have shown. An examination of the gradual evolution of tropisms, reflexes, instincts, intelligent action, and rational volition enables us to understand far better than before the meaning of human acts and consciousness." Warren, *Psychological Review*, 1914, p. 96.

An Inclusive Definition of Psychology.—The problem which confronts psychology to-day is as follows: Can traditional psychology and behaviorism be combined into one science or do they constitute two separate sciences? All knowledge is objective and gives knowledge about reality. The task before us, then, is to interpret the two systems of knowledge as knowledge about the organism. Is it not knowledge about the organism as functioning?

Yes; but this term is too broad. Digestion is a function of the organism, and so is the circulation of the blood. It is rather the functioning which involves the nervous system in its higher centres. *We may define psychology as the science of behavior and its control.* But what is this control? Shall we call it the brain or the mind? We really have three terms to bring together, brain, mind and consciousness. How can this be done? First of all, we must understand our terms. If we take the brain to be the reality in which the control is to be located, mind to be the type of control and consciousness something which is inseparable from mind and throws light upon it, we can think of the control, as at once brain, mind and consciousness. And so it must remain until the brain—mind—consciousness problem is solved.

Psychology is not justified in proclaiming itself *the* science of behavior. It is simply one of the sciences of behavior. "The question for general biology is whether the behavior is, as a matter of observation, adapted to the environing circumstances on the occasion of its first occurrence, or is brought into closer relation to these circumstances by acquired accommodation. The question for physiology is whether the behavior is due to certain inherited connexions among the neurones of the central nervous system, or is due to connexions which have been established in the course of the individual life. Both general biologist and physiologist may ignore the question whether certain psychological relationships are also present; *but only because they do not fall within their special field of study.*" Morgan, *Instinct and Experience*, pp. 88-9.

It follows that there is no conflict between biology and psychology. Biology is continuous with psychology so

far as behavior is concerned; and introspective psychology simply supplements behaviorism without contradicting its conclusions in the least. The methods of biology do not exhaust all we can know about an organism.

What Is Mind?—Objective psychology gains knowledge about that which controls the behavior of the organism. Let us call this control "mind." So defined, mind is the relatively permanent organization of instincts, tendencies, habits, and capacities which enable the animal to act as a whole to stimuli. The behaviorist points out that this internal control evolves, that an ant is incapable of doing the things that a rat can, and that a human being behaves in a far more plastic and 'intelligent' way than do the lower animals. Hence, mind is a fact which physical science is forced to recognize.

But orthodox psychology also gains information about mind, about that which controls behavior. It teaches that past experience helps to determine what we now perceive and what we do. It lays stress upon the instinctive foundation and looks upon the mind as something growing and developing as the organism functions. The psychologist cannot understand what is given in consciousness at various times without assuming that permanent powers and capacities exist which condition consciousness and are modified by it. This evolving background is the mind. But it is evident that this necessary hypothesis is identical with the hypothesis which objective psychology is forced to construct to explain its data.

The conclusion to which psychologists are coming is that mind is more than consciousness. "Consciousness, as appears from our previous account, is a name for a state, an act, or a condition, in short for something temporary. . . . It will suffice us for the moment that we give the

name of Mind to the permanent unity of which we conceive any given act of consciousness to be the temporary condition, act or state. . . . Conscious and unconscious operations then may be legitimately grouped together, and without prejudgment as to their ultimate nature the sum of them may be called Mind. Mind then appears as that which has consciousness in its foreground while in the background it is the theatre of energies, of interactions, of stresses and strains, the play of which goes to determine the character of the scene by which the foreground is filled." Hobhouse, *Development and Purpose*, pp. 20–1, *passim*. Essentially the same view is championed by McDougall. He writes: "The stream of consciousness is in part determined by influences coming from outside, which we call sense-impressions; but, when we take these fully into account, the course of the stream of consciousness remains still unexplained; that is to say, its course is not wholly determined by the two factors, consciousness itself and the sense-stimuli or sense-impressions. It is determined in a very important and, in fact, vastly predominant degree by some other real condition or conditions, which we commonly call the structure or constitution of the individual mind." McDougall, *Body and Mind*, p. 165.

Consciousness and Mind.—Let us try to get our concepts of consciousness and mind as distinct as possible. Consciousness is a stream. It is continually changing. This moment I have one set of feelings and ideas; the next moment I may be thinking of something quite different. It is an exaggeration to speak of consciousness as a flux, but it is certainly none to call it a process. Moreover, this process is intermittent. In deep sleep or a swoon, it is practically non-existent. For these reasons, I have de-

cided to classify consciousness as a *variant*. It is constantly changing and not directly conserved.

But consciousness is somehow indirectly conserved. The student gains by his reflections and observations. Knowledge is a growth, and we always know more than we are aware of at any one time. A well-stored mind is no metaphor. Consciousness seems to sink back into the mind and leave a deposit. Each pulse of consciousness may be likened to those coral insects which, dying, build up the reef upon which they have lived. Memory is, of course, the most overt proof of this positive modification of the mind.[1]

The mind which has expressed itself in the consciousness of to-day is different from the mind of yesterday. This functioning has changed it. Such change is a deepening of its content. It is obvious that we must not have a negative conception of the mind as simply an abstract system of naked potentialities. The mind is real and concrete and complex beyond imagination. While psychology gives us knowledge about it, it must not be identified with this abstract knowledge. If the mind is a potentiality so far as consciousness is concerned, in itself it is a veritable reality. It is the setting, source and condition of consciousness.

Because consciousness is the only reality we can experience or apprehend, we are prone to make a dualism between consciousness and its setting. Consciousness is a peculiar part of the mind. It is unique just as the mind is. But what we must not do is to try to apprehend both, decide that they are different in texture, and despair of com-

[1] What is often called the subconscious and the unconscious is mind in contrast to consciousness. Bergson's 'memory' and Freud's 'wish' enter here.

bining them into one apprehensible object. As we have pointed out, consciousness is the only part of reality we can apprehend. Hence our problem is to conceive consciousness as a change in a more inclusive reality about which we can gain knowledge. When we call the inclusive reality within which consciousness appears intermittently, mind, and speak of it as unconscious, we are only re-stating this acknowledged situation. The greater part of mind is the source and seat of consciousness and is therefore unconscious. But the very conception of the relationship precludes dualism.

References

Angell, *Psychology*, chap. 1.
Bergson, *Matter and Memory* and *Creative Evolution.*
Bode, *Psychological Review*, 1914.
Freud, *The Interpretation of Dreams.*
Hobhouse, *Mind in Evolution* and *Development and Purpose.*
McDougall, *Body and Mind.*
Morgan, *Instinct and Experience.*
Pillsbury, *Essentials of Psychology*, chap. 1.
Titchener, *An Outline of Psychology*, chap. 1.
Ward, "Psychology," *Ency. Britannica.*
Warren, *Psychological Review*, 1914.
Watson, *Behavior*, chap. 1.

CHAPTER XXII

THE RELATION BETWEEN MIND AND BODY

The Mind-Body Problem.—The last two chapters have been of the nature of a preparation for the discussion of the mind-body problem. What is the nature of this problem? It arises from a fact and a theory. The fact is that our minds and consciousnesses are clearly very intimately connected with our bodies; the theory is that we know that all physical bodies are alien to mind. In other words, reflective thought has been pulled in two different directions at the same time and has been unable to work out a harmonious view. The physical sciences have assumed that they alone had the physical world for their object and they have naturally concluded that the physical world must be conceived only in terms of the information they have acquired. The consequence has been the existence of a dualism. Mind and consciousness are real, yet immaterial. The physical world is real, yet material. The mind-body problem has consisted in the attempt to relate two such antithetical realities. *That* they are actually related has always seemed undeniable—at least the denial of a relation has been the counsel of despair. But *how* to conceive the relationship has been the crucial point of metaphysics. There have been many tentative solutions of the problem but none that have satisfied any large number of thinkers. Yet both because of its intrinsic interest and significance and because of the fact that it brings both theory of knowledge and metaphysics to a fo-

cus, a full discussion of it is desirable even in an introductory text.

Solutions Offered.—We can easily make a preliminary classification of theories about the mind-body relation into dualistic and monistic. Dualistic theories accept the distinction between mind and body as corresponding to an existential division in reality itself. The mind is one kind of reality and the physical world is quite another kind. Monistic theories are endeavors to avoid this dualism. The basis of their arguments is the belief that the distinction is due to the human point of view which conceptually severs what is actually a unity. There is not a mind and a body but only one complex existent which the knowing mind apprehends from different points of view and so doubles. Naturally, monistic theories to be complete must have a theory of knowledge which explains this tendency to conceive one reality as two different kinds of reality. Adequate theories must interpret illusions much as the Copernican view of the solar system enables us to understand why we see things in a Ptolemaic way.

Dualistic Theories.—Dualistic theories divide around the question whether or not a causal relation exists between mind and body. There are three main dualistic theories, although there are many varieties of these three. Since our purpose is to gain a clear idea of the mind-body problem, we shall not consider unessential variations.

Interactionism holds that mind and the physical world interact causally. Thus interactionism accepts two realities of equal rank, mind and body, and declares that experience indicates a causal relation between them. The advocates of this position always maintain that it covers the facts more naturally than any other dualistic

hypothesis. In sensation, it is quite apparent that the stimulation of the body affects the mind, while in volition the reverse is just as obviously the case.

Parallelism is the denial of interactionism. The parallelist refuses to regard physical and mental events as parts of one order of causes and effects. So impressed is he with the difference between the mental and the physical that he finds it impossible to conceive of interaction between them. Hence, he is led to hold that both orders are self-sufficient and independent even though they accompany each other so assiduously.

Epiphenomenalism may best be described as a materialistic form of parallelism. As a matter of fact, it wavers between parallelism and a one-sided causal view. The drift of the position is the emphasis upon the importance of the body as against the mind. The mind is only a shadow accompanying causal changes in the brain.

Interactionism.—While the acceptance of a causal relation between mind and body is the defining characteristic of interactionism, we must not ignore the fact that some interactionists conceive of the mind and of this relation more crudely than do others. The mind was first looked upon as a ghost-soul of a fairly material texture. The interaction of mind and body was not far different, then, from the interaction of two physical things. Also, when the mind was thought of as composed of fire-atoms, there was no theoretical difficulty. But as the mind was more and more de-materialized and extruded from space, difficulties multiplied. How can that which is not in space influence and be influenced by that which is in space? Does interaction involve a meeting or coming together? Descartes put the soul *in* the pineal gland even though he considered the soul unextended. But no modern

thinker has the temerity to contradict himself in such a fashion.

Let us examine a contemporary exposition of interactionism which is subtle enough to avoid all the grosser errors of early expositions of this view. Dr. McDougall, an eminent psychologist, writes as follows: "In a similar way we may describe a soul as a sum of enduring capacities for thoughts, feelings, and efforts of determinate kinds. Since the word substance retains the flavour of so many controversial doctrines, we shall do well to avoid it as the name for any such sum of enduring capacities, and to use instead the word thing or being. We may then describe a soul as a being that possesses, or is, the sum of definite capacities for psychical activity and psycho-physical interaction, of which the most fundamental are (1) the capacity of producing, in response to certain physical stimuli (the sensory processes of the brain), the whole range of sensation qualities in their whole range of intensities; (2) the capacity of responding to certain sensation-complexes with the production of meanings, as, for example, spatial meanings; (3) the capacity of responding to these sensations and these meanings with feeling and conation or effort, under the spur of which further meanings may be brought to consciousness in accordance with the laws of reproduction of similars and of reasoning; (4) the capacity of reacting upon the brain-processes to modify their course in a way which we cannot clearly define, but which we may provisionally conceive as a process of guidance by which streams of nervous energy may be concentrated in a way that antagonizes the tendency[1] of all physical energy to dissipation and degradation." *Body and*

[1] I am skeptical of this principle if taken as more than one tendency among others.

Mind, p. 365. What are the chief objections to such a type of interactionism?

The objection which science has usually expressed is that interactionism involves a denial of the continuity of the physical world. The brain-event acts upon the soul and so energy disappears from the physical system into the spiritual world. But such a breach of continuity cannot be conceived by the physical scientist; it would be for him as much of a miracle as the introduction of new energy into the physical system from outside. The quantitative form of the principle of causality as used by the physical sciences is the equivalence of cause and effect, that is, of the amount of energy, kinetic and potential, in a physical system at different times. Interactionism thus conflicts with the fundamental postulate of science that nature is a self-sufficient and inclusive system. We must, however, frankly admit that this objection, although a strong one which puts the burden of proof upon interactionism, is not final.

Another objection calls attention to the mystery involved in the presence of the soul with the body if their relation is so external. Whence comes the soul? Why is it influenced only by brain-states and not by other physical changes? Do souls evolve step by step with the brain in the animal series? Facing these questions, interactionists feel themselves compelled to construct a speculative metaphysics in which the soul controls evolution. Bergson's speculations in *Creative Evolution* are very interesting in this connection.

A third objection is that this conception plays fast and loose with the category of causality. Causality involves a system of co-existent things which are in an internal process of change. Such a system is spatial. But how can

the soul form one system with the body if it is distinct from the body? I fear that interactionism drops back to the popular view of causation as the stark production of something in a patient by an agent. But we must remember that action involves reaction. Moreover, is external causation able to account for the selective control of behavior? Consciousness does not know the brain as the pianist knows the key-board.

The fourth objection to interactionism is epistemological. Does it not assume that we know enough about the brain to know that it cannot be the soul? Yet the soul is described as only a sum of enduring capacities for thoughts, feelings, and efforts of determinate kinds! We must also note that it is the dead-level, mechanical view of the brain that leads the modern psychologist to flirt with interactionism. McDougall admits this in so many words: "And it is just because we have found that mental and vital processes cannot be completely described and explained in terms of mechanism that we are compelled to believe in the co-operation of some non-mechanical, teleological factor, and to adopt the hypothesis of the soul." *Ibid.*, p. 364.

While we cannot be said to have disproved interactionism, we have shown that there are decided objections to it. Our hope must be that a more satisfactory hypothesis can be offered.

Parallelism.—Parallelism is the denial of a causal relation between mind and body. But it accompanies this denial with the acceptance of dualism.

Metaphysical parallelism corresponds to the interactionism which we have just examined in being an ultimate theory instead of a statement of empirical conclusions. As such, it goes back to the Cartesian school. It appears

in its purest form in Occasionalism. The Occasionalists held that mind and matter are so alien to each other that it is impossible to think of them as causally interactive. The correspondence between their changes must therefore be accounted for by the mediatory activity of Deity for whom changes in the one are signs of changes to be produced in the other. Now, modern science so far as it leans toward parallelism is influenced by those arguments against interactionism which have to do with the conservation of energy and the causal self-sufficiency of nature. It is negative rather than positive, and is satisfied with excluding mind. The simplest form of such negative, dualistic parallelism is to be found in the position that consciousness is the constant concomitant of the activity of the brain, that for every psychosis there is a corresponding neurosis. For dualistic parallelism, such concomitance is ultimate and inexplicable.

There are two main objections to dualistic parallelism. The first is that this constant concomitance is a mystery that passes understanding. If there be no existential relation between them, why should the one be accompanied by the other? The mystery becomes still greater when we realize that there is a harmony between ideas in the mind and the behavior of the organism. The idea of moving my arm precedes the movement of that organ and not that of my head. The second objection to parallelism concerns the point in which interactionism is strongest. Can we understand human behavior in terms of purely mechanical causality? Do not meanings and plans so pervade conduct that it is inexplicable without them?

Empirical parallelism is simply another term for the empirical law of psycho-neural correlation. Investigation seems to show that every pulse of consciousness is ac-

companied by a brain-event. While metaphysical parallelism is dominated by spatial imagery, empirical parallelism is purely temporal in character. It would probably be best to drop the diagrammatic term parallelism and to speak of temporal correlation. While certain psychologists —Wundt, McDougall, and Bergson, for example—have denied the completeness of this correlation, they have done so in consequence of theories rather than in consequence of definite facts, and their position is not generally seconded by psychologists. We shall, therefore, take psychoneural correlation as part of our knowledge about the organism.

Epiphenomenalism.—Parallelism readily lapses into epiphenomenalism. Since, for the physical scientist, the body is the more self-sufficient system, it overshadows the intermittent stream of consciousness that is correlated with it. The inevitable tendency is to think of consciousness as a by-product of brain changes. The epiphenomenalist usually satisfies himself, however, with the declaration that the body is an automaton and that its behavior is uncontrolled by what goes on in consciousness. The chief article of his creed is that the physical world is a closed causal system.

In its desire for naturalism, physical science has almost made naturalism impossible. Mechanical rationalism has gradually induced materialism and epiphenomenalism, which is only a shame-faced materialism. While earlier naturalistic thinkers were willing to accept two substantial realities, mind and matter, later thinkers tended more and more to monism. There can be little doubt that the theory of evolution with its naturalistic way of handling man has aided this monistic development. But physical science in its drift toward monism found itself shipwrecked

on the reef of materialism. It was unable to re-interpret the physical world in such a way as to find a place for mind in it. The original dualism could not be overcome in any real way. Naïve materialism is unable to do justice to the fact of consciousness, for it is nonsense to say that the motion of atoms *is* consciousness. Epiphenomenalism is the attempt to occupy a compromise between parallelism and materialism; and, as in all such verbal compromises, it is either parallelism or materialism according to the outlook of the interpreter.

Epiphenomenalism is usually spoken of as involving a one-sided causal relation between consciousness and the body. The brain controls consciousness, but consciousness does not control the brain. It would be better to stress the materialistic aspect of the doctrine and to describe it as involving the production of consciousness by a brain which is by hypothesis alien to mind. The truth is that both materialism and epiphenomenalism are offshoots from Natural Realism; that is they begin with a 'natural dualism' and seek to obtain a monism by reducing the other term to the physical. Instead of re-interpreting both terms of this natural dualism in the light of a more adequate epistemology, they adopt the uncritical method of accepting their terms and then seeking to reduce one to the other. The preferred term is, of course, the brain.

To one who accepts a dead-level, merely quantitative view of nature, the difference between the brain and other physical things is only one of complexity. Hence, unless some reason can be given why consciousness should be correlated with complexity, the correlation is simply a brute fact. But the intellect can see no necessary connection between complexity and consciousness any more than between motion and consciousness. It is evident

that we must go deeper into both epistemology and metaphysics before we can solve the mind-body problem.

Monistic Theories.—All monistic theories deny that there is a causal relation between mind and body because they do not regard these as two existentially distinct things.

We shall discuss three types of monistic solution of the relation between mind and body. All three are bound up with epistemology and metaphysics and will therefore furnish the material for a review. We shall call the first theory psychical monism, the second the double-aspect theory, the third, the unity theory.

Psychical Monism.—Psychical monism is a deduction from spiritualism, which, it will be remembered, is itself a deduction from idealism. If all reality is spiritual or mental, the reality of the body must conform to this one universal kind of reality. The spiritualist asserts that what the dualist calls the body and regards as distinct from mind is only a perceptual or conceptual *symbol* of a part of a spiritual universe. Changes in the physical world as perceived events are only changes in the consciousness of some mind, and changes in the physical world as conceived by the scientist are likewise only changes in the knowing mind. But these perceived and conceived changes are signs of real events in the one universe which is immaterial in its texture and stuff.

This metaphysical solution of the mind-body problem turns around the reduction of the dualism characteristic of both popular and scientific thought. But, so far as the body of a person is *more than* his mind although not different from it, a somewhat similar problem remains. Some spiritualists maintain that the brain is practically a mechanism played upon by the mind. Such thinkers would

appear to teach that there are grades of spiritual tension in reality and that the physical world represents a lower level of spiritual activity. In this way, they avoid the traditional dualism of substance and substitute a qualitative duality between spirit and matter. Bergson, for example, holds that matter is the degradation of spirit and takes the form of space, while pure spirit is activity and exists in time. Such antitheses are striking, but have not yet been carried out successfully. Practically, Bergson's position approaches interactionism. The brain is the instrument of the mind.

Panpsychism offers a simpler form of psychical monism. The brain is the symbol of consciousness. If personal consciousness is not enough, the panpsychist simply postulates more consciousness. The essential premise is epistemological. As a phenomenalist, he teaches that consciousness is the very stuff of reality. There are many questions, however, upon which panpsychists are not settled. Is consciousness atomic in its structure? Are there evolutionary levels of consciousness? But so far as the usual form of the mind-body problem is concerned, panpsychists are agreed that their position shows that it is a false problem. Mind and body do not interact causally or run parallel because body is only the symbol of mind and not itself a reality. *But the problems suggested by science are not furthered by panpsychism.*

The Double-Aspect Theory.—There have been many formulations of the double-aspect view. One of the clearest of the older statements is that of Höffding. "If it is contrary to the doctrine of the persistence of physical energy to suppose a transition from the one province to the other, and if, nevertheless, the two provinces exist in our experience as distinct, then the two sets of phe-

nomena must be unfolded simultaneously, each according to its laws, so that for every phenomenon in the world of consciousness there is a corresponding phenomenon in the world of matter, and conversely (so far as there is reason to suppose that conscious life is correlated with material phenomena). The parallels already drawn point directly to such a relation; it would be an amazing accident, if, while the characteristic marks repeated themselves in this way, there were not at the foundation an inner connection. Both the *parallelism* and the *proportionality* between the activity of consciousness and cerebral activity point to an *identity* at bottom. *The difference which remains in spite of the points of agreement compels us to suppose that one and the same principle has found its expression in a double form.* We have no right to take mind and body for two beings or substances in reciprocal interaction. We are, on the contrary, impelled to conceive the material interaction between the elements composing the brain and nervous system as an outer form of the inner ideal unity of consciousness. What we in our inner experience become conscious of as thought, feeling, and resolution, is thus represented in the material world by certain material processes of the brain, which as such are subject to the law of the persistence of energy, although this law cannot be applied to the relation between cerebral and conscious processes. It is as though the same thing were said in two languages." Höffding, *Outlines of Psychology*, pp. 64–5. Let us examine this formulation.

The weak point of the double-aspect theory is its undefined use of the terms outer and inner. These words denote spatial differences ordinarily but they are given a metaphorical significance in this excerpt. Is there an inner aspect for reality itself? Or is this distinction purely

relative to two methods of knowledge? Again, what is meant by a principle expressing itself in a double form? These questions have never been clearly answered by the advocates of the double-aspect theory.

Recently a psychologist has attempted to offer an empirical analogy for the double-aspect view. The outer aspect, the brain, is to the inner aspect, consciousness, as surface is to mass. "In the surface-mass relation one aspect of the change is perceived by the eye, the other aspect by the muscle sense. Similarly, in the neuroconscious relation one aspect is objective—it is perceived from without; the other aspect is subjective—it is the conscious experience of the living organism itself. . . . Changes of surface and changes of mass do not influence one another, neither are they independent. Just so the monodualist (the holder of the double-aspect theory) regards the activity of consciousness and the activity of the nervous system as neither causally related nor parallel. They constitute one single process, observable in two ways." H. C. Warren, *Psychological Review*, 1914.

The aim of the monodualist, as Professor Warren rather quaintly describes his position, is commendable. But what does he understand by the phrase, "observable in two ways"? It savors of naïve realism so far as the nervous system is concerned. But we have seen good reason to hold that we can gain knowledge about the nervous system but can perceive only our percepts which are in consciousness. Following up this criticism, we are led to pass to the unity theory. This theory does justice to the aims of the double-aspect theory while founding itself upon a more adequate theory of knowledge.

The Unity Theory.—The unity theory holds that consciousness is a part of the nature of the brain when it

is functioning. In other words, the traditional dualism is a product of a mistaken outlook. The problem is not to get two things together but to account for the doubling in the human mind of the one seamless reality.

The first alteration which must be made in the double-aspect theory is the substitution of the term knowledge for observe or perceive. The physical sciences give knowledge about the world and this knowledge involves a conceptual framework which we have called the categories. We may speak of these as the categories of the physical sciences. Knowledge is within consciousness, but that about which the physical sciences give knowledge is not within consciousness. It is reality to which this knowledge is referred by thought. Consciousness, on the other hand, is something experienced; it is the changing field of the individual's experience. *Such consciousness is real, but is it the whole of reality?* Obviously not, for the knowledge gained in the physical sciences does not fit it. Must we not conclude, therefore, that the same reality about which we gain knowledge in the physical sciences contains consciousness? We are now able to give a non-metaphorical interpretation of what the advocates of the double-aspect theory have really meant by the outer aspect. It is reality as known by means of the physical sciences, while the inner aspect is consciousness as admittedly real. Unfortunately, an adequate theory of knowledge is necessary before one can really state and solve such problems as these.

What Is the Mind?—We must hold, therefore, that mind is a term for that which controls responses. But that which controls responses expresses itself in and so is revealed, to that extent, by consciousness. Putting the results of introspective and objective psychology together

as both giving knowledge about mind, we are driven to the conclusion that mind is not a thing apart from the organism but only a selective term for those inherited capacities of the organism which are developed and filled out by its functional activities. Thus knowledge about mind is knowledge about the organism and should not conflict with the knowledge contributed by the other sciences. The organism is a much more wonderful thing than we have sometimes supposed. It is almost unthinkably complex, highly organized, self-regulating and plastic.

But the *knowledge* about the organism which we sum up under the term mind must not be identified with the reality to which it is referred. When we speak of mental habits, capacities, past experience, training, etc., we must not forget that reality is not a capacity merely nor something past but an actual existent. If we follow the guidance of modern knowledge, we must conclude that the brain is the existent to which this knowledge must be referred. But if so, the brain must be thought of in the light of all available knowledge about it. The knowledge contributed by psychology must no more be ignored than that contributed by the physical sciences. By so combining all of our knowledge, we can gain some idea of the richness of content of the brain. But we are now far from identifying the brain with any perceptually or conceptually apprehended object. It is within the brain, so understood, that we, as conscious creatures, live and have our being, our senses being instruments of communication with the world outside.

References

Bergson, *Matter and Memory.*
Fullerton, *An Introduction to Philosophy*, chap. 9.

Höffding, *Outlines of Psychology.*
McDougall, *Body and Mind*, chaps. 12 and 26.
Sellars, *Critical Realism*, chap. 9.
Strong, *Why the Mind Has a Body.*
Warren, *Psychological Review*, 1914.

CHAPTER XXIII

PURPOSE AND MECHANISM

The Presence of Sharp Contrasts.—Both science and philosophy have been replete with sharp contrasts such as living matter and lifeless matter, the material and the immaterial, mechanism and purpose. These harsh antitheses have puzzled reflective thought, for they have been the sign of discontinuities and threatened dualisms. If living matter is so different from lifeless matter, how do they both happen to be in one universe? And if life is something entirely new appearing only at a certain stage in the history of the earth, whence did it come? Again, if the material world is distinct from the immaterial, why do they accompany one another so assiduously in the psycho-physical organism? At one time, such problems did not greatly trouble the human mind for the assumptions in which it worked were dualistic. The student will remember that Descartes accepted the traditional division of reality into two substances without hesitation. But both science and philosophy have been working toward a monistic, naturalistic outlook. Nature is somehow one and is the mother of all things. The result has been an increasing dislike for discontinuities and dualisms and a growing desire to overcome the traditional antitheses by more adequate and plastic analyses. In the last chapter, we have been the witnesses of a recent attempt to explain away the contrast between mind and body as due to a mistaken interpretation of the difference between the

knowledge gained by the physical sciences and the actual consciousness of the individual. Let us now follow up this approach with a discussion of the age-old contrast between mechanism and purpose.

The Mechanical View of the World.—The reflective distinction between the mechanical view of the world and the teleological, or purposive, view arose among the Greeks and has continued ever since as a clash between two outlooks. But during the intervening years both terms of this contrast have changed and taken a new setting and new implications. What we must try to do is to get as clear ideas as possible of mechanism and purpose and to see whether it is not feasible to harmonize them in the light of an evolutionary interpretation of the world.

It is often illuminating to approach the more complex problems of the present historically. Let us, therefore, discover what the mechanical theory of nature meant for its first advocates.

The atomists were mechanists, that is, they held that all changes are only re-configurations of the primary elements which compose the world. *In short, all changes are motions.* Such motions were judged to be explicable in terms of the motions just preceding. The logical conclusion drawn was that the laws of motion were the laws of all causal change.

The atomists were materialists. But materialism was boldly challenged by Plato and his school. Matter for Plato is the unreal. Only ideas, which are non-spatial and eternal, are real; and these ideas are creative energies which mould the sensible world. Thus in contrast to Democritus, Plato is a teleologist. The world is controlled by intelligent plans and purposes. Ideas are of the nature of final causes which operate upon the world and give it

significance and order. The realm of ideas is rational and purposive, while the domain of matter is governed by blind necessity.

When we examine this contrast, we realize that necessity is identified with the efficient causality characteristic of atomistic realism of the Democritean type. It is *blind* necessity because there is no foresight of what is to occur. What occurs must occur, and there is no anticipation of consequences. The future is uncontrolled by anything analogous, in the least, to reasoning. I think that we must admit that this description does hold for the strict mechanical view of the world. But I also think that we must qualify the usual identification of efficient causality with the sort of change characteristic of mechanism. There may be other types of efficient causality.

It behooves us, therefore, to gain a clear idea of the mechanical ideal. In mechanics, science seeks to analyze a system of particles in motion and trace its transition into the state which follows. The laws of transition are the laws of motion as these have been determined by the study of such systems. It is urged by mathematicians "that, ultimately, the whole history of a system of material particles is describable in terms of their masses and spatial relations . . . and that in order to predict the future or reconstruct the past of any material system, all we need to know is the geometrical configuration of its particles in any two moments of time." T. Percy Nunn, "Animism and the Doctrine of Energy," *Proceedings Aristotelian Society*, 1911–12.

As we shall point out in a succeeding section, this mathematical outlook is an abstract scheme of a conceptual nature. It is doubtful whether it actually corresponds to any physical process. It seems to recognize matter as

only a quantity of inertia whereas the physicist, even, asserts properties other than inertia of his world. But the atomism of Democritus—and we may say of the seventeenth and eighteenth centuries—corresponded pretty closely to the mathematical constructions of particles in changing positions. These passive atoms are helpless units which change their position much as a ball seems to do when it is struck. In such a world, there is neither chance nor purpose. But modern physics has begun to realize the fact that this scheme is external and descriptive and leaves the processes unexplained. Are the data of mathematics, particles and positions, equal to physical reality?

It is interesting to note that, while some philosophers are satisfied to interpret the physical world in terms of this outlook, others are very skeptical. And the same difference of opinion prevails among scientists themselves. There can be little doubt that its fascination is more due to its ideal simplicity than to its empirical verification.

The Teleological View of the World.—The teleological view of the world laid stress upon motive and design. In its popular form, it expressed the belief that things were created for a purpose and that their structure revealed design. And such design implied a designer whose creations they were. We may call this outlook *external teleology*. It was the common faith that animals and plants were made for man's sustenance and that the human organism could not be accounted for in all its marvelous intricacy apart from the agency of some supreme intelligence. That such a self-perpetuating complex of interacting organs could have come about without design seemed to the majority to be unbelievable. The body, it was

said, could not be the work of chance, meaning by chance without a controlling purpose.

The essential motives of this popular view found technical philosophical expression in the philosophy of Aristotle. Following Plato, Aristotle taught that forms or ideas controlled the material world. These forms exerted their influence, not as efficient causes interacting with other things, but as final causes or guiding ideals. The material world is so constituted that it yearns after the perfection which the ideal realm portrays. During the Middle Ages, this Aristotelian view held sway, and it was not until the rise of modern astronomy, mathematics and physics that the idea of efficient causality gained the upper-hand.

The weakness of the Aristotelian theory was its inability to be tested by observation and experiment. Final causes are by hypothesis intangible. To explain a bodily process by final causes was soon seen to be a merely verbal affair. Harvey's explanation of the circulation of the blood made a tremendous impression because of its concreteness and verifiability. The bolder spirits soon whispered that final causes were purely imaginary causes. Descartes was one of the first to declare that bodies are mechanisms, that is, machines. Of course, physiology was not advanced far enough to make this declaration more than a principle of investigation.

It remained for Darwin to give the death-blow to the hypothesis of design, whether external and creative or internal and guiding. Cannot all these admirable adaptations be explained as the result of their survival value? "Darwin's greatest claim to fame lies in his discovery of a new scientific canon. Before his time the only alternatives for explaining progress were 'design' and 'chance.'

He pointed out an intermediate alternative in 'natural selection.' It is to be regretted that biologists have recently shown a tendency to minimize its importance. For while Darwin's description of the process may require revision, the canon itself underlies the whole structure of modern evolution. Without it we are thrown back on a magic of chance or a mystery of entelechy. Up to the present, at least, no biologist has discovered a substitute for 'natural selection.'" Warren, *Journal of Philosophy, Psychology and Scientific Methods*, 1916. As McDougall points out, the Neo-Darwinian school hold that "the last ground for the recognition of any teleological factor in the biological realm has been washed away for ever by the Darwinian principles."

The Present Situation.—As in so many other things, the present in science is one of critical reflection. Detailed research in the various special sciences has corrected the tendency to over-simplify nature. At the same time, more effort is being made to analyze concepts and to state their limitations. At no time have philosophy and science been more critical of assumptions. The result has been both a greater variety of opinion and a lessening of dogmatism. Two tendencies are marked enough to merit discussion in this connection. They are the revival of vitalism and the criticism of mathematical rationalism.

The Criticism of Mathematical Rationalism.—For Descartes, the physical world was, by definition, identical with space. Hence, it was logical to assume that mathematics could exhaust its nature. Such an outlook deserves the descriptive term mathematical rationalism. But even mathematicians have begun to point out that mechanics deals in large measure with ideal constructions. If we once grant that nature corresponds to these constructions, we

must admit that all changes are mechanical. But what right have we to assert such a correspondence? The actual laws of nature in physics, chemistry and biology must be discovered largely by induction. "And therefore the test of the validity of an ideal construction is whether it can be applied in such a way as to enable us to interpret observable phenomena. Now observable phenomena have a way of being so terribly complex that in a thousand cases we do not know whether the necessary conclusions within a mechanical scheme, as such, are applicable to the observable routine of phenomena. We often know little or nothing about the particles or their positions. We cannot get any mechanical snap-shots." Morgan, *Instinct and Experience*, p. 254. The only conclusion we can draw from a study of the various autonomous physical sciences is that mathematical rationalism is very far from proved. It is really a seductive metaphysical theory.

A wiser form of the mathematical interpretation of the world is not identical with the sole validity of the laws of mechanics as a special science. It points out, instead, that science seeks to discover quantities wherever it can and to work out relations between these quantities. But from the fact that such quantities are always obtainable, even in psychology, it does not follow that the method of change in the system investigated is mechanical. Since we have concluded that the real world is spatial, temporal and massive, we are not surprised to find quantity in all the sciences that deal with it. And wherever there is quantity, mathematics is applicable. *In other words, whatever the mode of change in a physical system, science would be able to find quantities. Hence, the discovery of quantities does not prove that the mode of change corresponds to the laws of mechanics.*

The Ambiguity of the Mechanical View.—There can be little doubt that the phrase, the mechanical view, is ambiguous. For some thinkers, it means an orderly view and not much more. Still others have dropped the phrase and speak of a mechanistic view. Many thinkers, again, have given up both of these phrases and champion a physico-chemical view. Judging from the context, they are opposing the introduction into nature of mysterious, non-physical forces or entelechies which are, by definition, not subject to scientific tests. This struggle for monism and continuity as against dualism and discontinuity has of recent years come to a head in biology in the controversy between vitalist and mechanist. Unfortunately, there has been a discouraging lack of definition on the part of mechanists and vitalists alike. It is often impossible to tell just exactly what is meant by mechanism and vitalism. Are these two terms to be taken as reciprocally exclusive and as jointly exhaustive of the possible types of theory about organic processes? (*Cf.* Lovejoy, *Science*, 1911, p. 76.) A deeper study has begun to show that the physico-chemical standpoint is not necessarily the same as the kinematical.

The physical world at the inorganic level, even, shows *creative synthesis* and *logical discontinuity*. Let me explain these terms. By creative synthesis is meant the possession by a *whole* of qualities not possessed by the parts, that is, these qualities cannot be derived *additively* from those of the parts. It is interesting to note that Radl, a German biologist, defines his brand of vitalism as "the idea that new methods of action arise when new combinations occur, taken in connection with the view that new combinations are found in living things." The notion of logical discontinuity is the logical statement of this empirical generalization. It asserts the undeducibility of chemical laws

from physical laws and of biological laws from chemical laws. Each science is autonomous and not simply an imperfect form of a more abstract and fundamental science. It must be borne in mind, however, that such logical discontinuity does not involve dualism or pluralism in nature but something of the nature of evolutionary change or levels of development. If we accept such creative synthesis in nature, mechanism *versus* vitalism is not a correct dichotomous division.

The Revival of Vitalism.—One of the noteworthy features of recent biological literature has been the revival of vitalism. In the large, we may define vitalism from two angles. As a positive doctrine in its radical form, it is an appeal to an agency of a non-physical kind for the explanation of living processes. In its more critical and less positive form, it is a protest against a too facile and vague mechanical view such, for instance, as that represented by Jacques Loeb.

Investigation has shown the tremendous complexity of animal forms. When Descartes spoke of animals as machines, he seems to have meant his expression in a pretty literal way. But few biologists to-day would feel that the analogy between human-made machines and organisms is an adequate one. The differences are greater than the likenesses, and it is to that extent a false and misleading analogy. Several writers, among them Dr. Hans Driesch, have undertaken to demonstrate the inadequacy of this comparison. Identifying the anti-vitalistic view with the belief that the organism is a very complex machine, they hope to prove vitalism in this way. But, as we have tried to indicate, they must first satisfy the thinker that the machine-view, which is a form of mechanicalism of the extreme sort, is the only alternative.

When we come to the more positive side of the new vitalism of a dualistic tendency, we find ourselves in metaphysics. Dr. Driesch appeals to a non-physical agent, that is, to something alien to the physical world. It is not *in* space but acts *into* space. It is not in the material organism but only 'manifests' itself in this material. But the student will recall that we have more than suggested that even consciousness is in the organism. It would seem, then, that Dr. Driesch's vitalism has, for its counterpart, an inadequate view of the physical world. His dualism would seem to us an expression of a false theory of knowledge and of a consequently false metaphysics. No one who reads Dr. Driesch's exhaustive work, *Philosophy and Science of the Organism*, can fail to note the Kantian element in its argument.

The demand with which vitalism on both its positive and its critical side confronts us, then, is whether a more adequate philosophy of nature can be developed, a philosophy which takes evolution seriously.

Are There Levels of Causality?—We suggested a while ago that the mistake characteristic of the ancient contrast between efficient and final causation was the assumption that there can be only one type of efficient causality, *viz.*—the mechanical. But if we admit creative synthesis, it seems to follow that we must also admit something of the nature of organization in nature. And if we analyze the category of organization, it is seen to imply what may be called the presence of *internal relations* in nature. The particles of which mechanics speaks have only positions and do not have genuine relations. They are not bound together dynamically and from within. Such terms as attraction and repulsion and chemical affinity and the saturation of valency can have no meaning

for mechanics. But reflection upon the data of physics and chemistry convinces one that these terms are intimately associated with the existence and possibility of creative synthesis and organization.

But surely we must admit that an organized system which is bound together by internal relations into something of the nature of a unity has a tendency to react as a whole to the stimuli acting upon it from outside. Hence we must infer the possibility of differential reaction in nature as a function of organization. Such differential reaction does not conflict with the idea of efficient causality but simply involves the admission that there are, as it were, levels of efficient causality.

Now many recent experiments in biology, including those of Driesch, seem to teach that the organism is just such a highly organized system which reacts in a differential way to stimuli. Even the egg has a capacity of regulating its development after disturbing factors are introduced, which is comparable to the ability of a man to reach the same goal in different ways.

But the solution of the mind-body problem which we have advanced enables us to affirm the reality of the high level of efficient causality which we find in human behavior. The control which such behavior implies is essentially non-mechanical and can be understood only as the expression of internal relations and system. If, as we have taught, the science of behavior gives genuine knowledge about nature, it indicates in no uncertain way the existence of creative synthesis and the rise of levels of causality. *Here we have true, or critical, anthropomorphism.*

Efficient Causality and Purpose.—The only purposes we are directly acquainted with are our own. Can we show that they are effective in the control of human behavior

and so harmonizable with efficient causality? We are trying to get on the inside of this high level of causality and, at the same time demonstrate that there is no conflict with our knowledge about nature.

We may define a purpose as a plan about the future which is assented to. A developed plan always contains a series of subordinate plans which are called the means. When the means are successfully realized, the anticipated result is experienced as a present fact. The plan concerns the future, and is an attempt to make this future of a certain kind. We must always remember that the plan is a present fact and that the future it has in mind is something thought of as conditioned by the present. It differs from a mere prediction because it is a factor which seeks to bring about that which it hopefully anticipates. When the later experience accords with the purpose, the latter is said to be fulfilled.

From the standpoint of psychology, the plan is an internal stimulus which controls the behavior of the organism in such a way that this correspondence between forethought and later experience ensues. We soon learn that this correspondence necessitates the adoption of the right means, which adoption depends upon past experience and reasoning. Thus capacity of a high synthetic grade is called into action.

Now so far as introspection goes, the series of ideas related as end and means precede the overt behavior of the organism. What further occurs in the organism is hidden from view and can only be inferred in terms of knowledge about the organism. But in the preceding chapter we have argued that consciousness is in the brain as a part of its nature when functioning. The existential relations of the idea in the brain, as a physical reality which has reached

the mental level, are internal and so intimate that the uniqueness of the idea is a sign of the uniqueness of the brain-event of which it is an expression and part. The dominance of this brain-event leads to the sequential innervation of the muscles and so to the overt behavior which corresponds to the idea.

The fact to note is that the future does not control the present at all as teleology has sometimes taught. It is the present plan, as expressive of the individual and embedded in him, that controls the ordered behavior of the organism. Moreover, there is no dualism here as extreme vitalism supposes. It is simply a case of complex efficient causality. Behavior is controlled by the brain, but it is not the brain as known in terms of the physical sciences only. The primary question comes to be this, How is the brain able to control behavior in this anticipatory way? How is this peculiar type of efficient causality possible? Objective and introspective psychology have given two answers which are now seen to be quite harmonizable. The behaviorist asserts that the brain is a plastic organ capable of forming associations and making internal adjustments, in fact, of doing what corresponds to memory, association, reasoning and willing. It is the organ of intelligence. The introspectionist asserts that ideas are slowly connected with particular motor impulses. The unity theory holds that the brain remembers, reasons, and wills because the brain is the mind, that is, the mind is a term for the conditions and capacities which express themselves in consciousness and the behavior of the organism, and these conditions and capacities must be regarded as resident in the brain.

Is the Brain as Mind a Mechanical System?—Philosophers have been accustomed to regard mind as non-

mechanical. How can we connect reasoning with mechanical causation? The mind includes capacities of a profoundly cumulative and synthetic character. Organization and interpretation of the part by the whole seem to be essential features of its constitution and operation. It may be replied that such non-mechanical behavior is appearance rather than reality and that analysis can reduce it to a complex of purely atomic elements combined in such a way as to appear non-mechanical. But such a reply is pure dogmatism. No such reduction has been carried through nor is it apparent that it would be possible. The mind is selective and planful, and it is impossible to deduce selection from discrete atomism.

Both psychology and physiology are pointing to the conclusion that the brain has a tremendously complex organization partly hereditary and partly developed during the lifetime of the individual. The brain, like the mind, forms apperceptive systems which function as wholes. There is every reason to believe in a complete parallelism of method between mind and brain. The one is just as much and just as little a mechanism as the other.

And if consciousness is a part of the nature of the brain and is literally in it as an extensive variant, certain suggestions come at once to our minds. The continuity of consciousness, the unity and togetherness of the individual's changing field of experience, must reveal the dynamic continuity of the active brain. The systematic character of our concepts and purposes must be an index of the system-forming and system-sustaining capacity of the brain. And if the brain possesses this truly organic character in which the part plays into the whole and the whole controls the part, it is not a machine. It does not need its dice to be loaded, for it has a self-sustaining unity

whose action is intelligent and regulative. Each stimulus obtains a total reaction. Thus, the location of consciousness in the brain throws a flood of light upon the brain and thence upon nature. It proves inductively and, as it were, from within reality, itself, that reality is capable of forming internal relations and continuities.

How Shall We Conceive of the Efficacy of Consciousness?—Physical science does not include consciousness as such among its objects and therefore can never include it among its factors. Consciousness is here a means to knowledge and not the reference of knowledge. It would be absurd for physical science to expect to deduce consciousness from its data or its theories. It follows that the physical scientist cannot introduce consciousness as a causal factor into his conception of the mode of change in nature. He must use objective categories which fit his material, that is, categories such as space and position and organization which form the natural framework of the knowledge about nature which he achieves. This situation holds true of the biologist as well, and in a large measure of the psychologist. But psychology, as we have already pointed out, is in the peculiar position of living in a complex field in which different kinds of knowledge converge, and of trying to see them together. It is for this reason that the psychologist has the mind-body problem on his hands, and, while he may ignore it by a device like that of parallelism, is always haunted by it.

When we realize that the cortex becomes conscious when it functions, we can draw certain definite conclusions. First of all, consciousness should not be spoken of as a form of energy, for energy is a term which concerns our measurable knowledge about reality, and consciousness is not a measurable quantity in this sense. Hence, as we

have said before, consciousness cannot enter as a factor in physical science. *And in this fact lies the truth of parallelism.* If consciousness is within reality, its efficacy cannot conflict with the principle of the conservation of energy which holds for all of reality. In the second place, the fact that reality becomes conscious must have something to do with the mode of change in the cortex. Can such a complex system as the cortex win a satisfactory internal adjustment when it is blind? Is not consciousness the system of cues necessary for the operation of mental capacities? Such is the position to which I am forced by my own thinking and to which I can find no objection in either empirical science or epistemology. Consciousness does not act upon parts of the brain externally or mechanically for it is not a physical thing; it is the reality of the cortex illuminating and guiding itself.

References

Bergson, *Creative Evolution.*

Driesch, *Science and Philosophy of the Organism.*

Jennings, "Doctrines Held as Vitalism," *American Naturalist,* 1913; "Heredity and Personality," *Science,* 1911.

Loeb, "The Mechanistic Conception of Life," *Popular Science Monthly,* 1912.

Lovejoy, "The Meaning of Vitalism," *Science,* 1911; "The Import of Vitalism," *Science,* 1911.

Marvin, *A First Book in Metaphysics,* chap. 21.

Morgan, *Instinct and Experience,* chap. 8.

Schafer, *Inaugural Address, Nature,* 1912.

Sellars, *Critical Realism,* chap. 9.

Spaulding, "Driesch's Theory of Vitalism," *Philosophical Review,* 1906.

Ward, James, *Purpose and Mechanism,* Aristotelian Society, 1911–12.

Warren, *Psychological Review,* 1914.

CHAPTER XXIV

THE PLACE OF VALUES

Knowledge and Valuation.—The special sciences gain knowledge about the world, and it is the task of philosophy to coöperate with them in a reflective and comprehensive way in order to systematize and harmonize this knowledge. As we have seen, the preliminary problem which philosophy has to undertake is to determine the nature and conditions of knowledge. In a strict sense, epistemology is a science for it involves the tracing out and solution of specific problems. But this discipline is philosophical because it examines the assumptions of organized experience and builds upon its results in a reflective way. The method and point of view is so different from that which characterizes the various positive sciences that little objection is felt to this classification. *It is so obviously a science at second remove, a science which does not add to the content of the special sciences.* Upon the foundation of epistemology, metaphysics develops as an attempt to gain a comprehensive view of reality as known. How intimately this reflective discipline works with the sciences has been shown in the preceding chapters. It is not too much to assert that we have gained at least an outline view of reality.

But thus far we have considered philosophy only as a reflective movement working with the results of the various positive sciences. That is, we have been almost entirely interested in the universe as revealed by the natural sciences including psychology. Now, however, we must

give our attention to another group of sciences which center around man and have the peculiarity that they treat of *valuations* which man puts upon himself, his acts and his surroundings. Man values as well as knows. He reacts to things in an emotional and affective way, saying that they are good or bad, beautiful or ugly, evil or beneficent. This characteristic raises questions of wide import which cannot be taken up in a satisfactory way by a narrow discipline. The consequence is that philosophy is obliged to continue itself and bring this new sphere into harmony with epistemology and metaphysics. Are the values we give to things actually in them, or are they meaningless apart from the constitution and purposes of human beings? Is the world beautiful and good in itself, or only in the eyes of conscious creatures who react toward it emotionally because their weal and woe is bound up with it?

Naïve Realism and Values.—In order to get a clear view of the problem, it will be best once more to begin with the standpoint of naïve, or natural, realism. How do we ordinarily experience values? To what do we refer them? A little reflection is enough to convince one that perceptual objects are considered beautiful or ugly in their own right much as they are seen to be colored and felt to be heavy. This picture by Rembrandt, whose reproduction hangs on the wall in front of me, is so charming in conception and execution that I instinctively call it beautiful. I do not say that it has a certain emotional effect upon me but, instead, pass a judgment upon the thing itself. And so with the various objects and groups of objects which come under my eye. The beauty of the world whispers to us from *out there*. The delicate charm of a spring morning in the woods when the buds are just burst-

ing on the trees and the sap is flowing through the branches and the birds are singing and the clouds are like soft wool is a vital aspect of the whole landscape and atmosphere. Nature *is* beautiful. We know that at the time as intimately and with the same certainty that we know that the grass is green and that the birds are singing. Æsthetic judgments apply as objectively as any of the other judgments we make about the perceivable world.

But doubt awakens even sooner for these *tertiary* qualities of things than for the secondary qualities like color and odor. When we are in the æsthetic mood and attitude, we are sympathetic contemplators of perceptual objects. But, alas! how often this mood vanishes and leaves us staring coldly at things which only a moment before had charmed us out of personal desires and humors! We know that they will again appear beautiful to us, but just now a shadow has come over them and some subtle quality has been withdrawn. It does not take us long to realize that the fault is with ourselves. We do not react in the same way. Nature has not changed but we ourselves have altered. And reflection soon recalls and analyses other cases of similar alteration. We remember that certain things appealed to us as pretty when they were fresh but that we grew tired of them, and then they were no longer the same. The color and form, in fact all that depends upon the eye, remained the same; yet they had lost that subtle something we call beauty. But it is not only physical things which possess and lose this quality. The artist who deals with words must likewise reckon with the baffling uncertainty of its presence. High emotion gives beauty to a creation which later will appear worthless and trivial. What greater and yet what more common disappointment is there for the writer than "to find the

next day, in place of the golden bough miraculously blooming during a flowing hour, a dry thorn, a frost-bitten flower!" We know, again, what wonders love can work. To the lover, the beloved is radiant with a beauty no one else can see and to whose existence he himself was blind before the great event which opened his eyes. In this fashion, reflection presses upon us the fact that beauty is intermittent and that we ourselves in some way control its appearance.

A Realism still more Primitive.—The Natural Realism from which we have taken our point of departure in discussing problems of epistemology is really that of what Sidgwick calls 'enlightened common sense.' The physical world of the civilized man of to-day is far different from that which his primitive ancestors experienced. Our world is a civilized world with no barbarian depths. It is well-ordered and obedient to the laws which our scientists have discovered for it. Its energies are potentially measurable and its levers and springs not too deeply hidden to be visible to the keen eye of the thinker. Man has been busy making nature in terms of his scientific concepts, and his creation is so familiar in its general outlines that we all tend to picture the world in terms of space and mass and movement. Massive and gigantic as the physical world is in its stellar immensities, for which our familiar earth is but as a grain of dust, it is yet all of one kind. Spectrum analysis has found the chemical elements in burning suns thousands of light-years distant, and mechanical analysis has proven that the Newtonian principles of gravitation rule these blind masses and have induced a rhythm in their movements. It is a rationalized world, a world transparent to the human mind and, as it were, impersonal and emotionless.

We may say, then, that the perceptual world of the educated man of to-day is interpreted in the light of this construction of the science of the last four centuries. Probably he sees a landscape similar to that which the man of the old stone age saw, but its background and interior are different. It is to this difference beyond the colored surface of things to which attention must be drawn. We have described the outlook of enlightened common sense; we must now try to catch a glimpse of primitive common sense.

Primitive common sense finds its clearest expression for us to-day in the assumptions and imaginings of young children. All things are alive for them and not greatly different except in bulk and appearance from themselves. The young boy of four years who is greatly fascinated by the aeroplane which flies gracefully above him wants to know where it sleeps at night. Again, he may ask such questions as the following: Do the stones want us to walk on them? Do the flowers like to be picked? Now this natural interpretation of his surroundings in terms of his own life was not stopped and brought to a halt in primitive man by contact with a wiser and older race, and so they had a longer childhood in which all the richness of a fuller imagination and a wider experience than the child's could expand within this child's view of the world. The consequence is what is called animism and mythology. These bloomed without artifice because reflection had not made them artificial. The poet of to-day knows that trees do not whisper together at sunset: they whisper only for him, not actually. But for men untouched by the stern rationalism of science and philosophy they whisper and dream and sleep.

"Now the fact that crude experience is innocent of mod-

ern philosophy has this important consequence: that for crude experience all data whatever lie originally side by side in the same field; extension is passionate, desire moves bodies, thought broods in space and is constituted by a visible metamorphosis of its subject-matter. Animism or mythology is therefore no artifice. Passions naturally reside in the body they agitate—our own body, if that be the felt seat of some pang, the stars, if the pang can find no nearer resting-place. Only a long and still unfinished education has taught men to separate emotions from things and ideas from their objects. This education was needed because crude experience is a chaos, and the qualities it jumbles together do not march together in time. Reflection must accordingly separate them, if knowledge (that is, ideas with eventual application and practical transcendence) is to exist at all. In other words, action must be adjusted to certain elements of experience and not to others, and those chiefly regarded must have a certain interpretation put upon them by trained apperception. The rest must be treated as moonshine and taken no account of except perhaps in idle and poetic revery. In this way crude experience grows reasonable and appearance becomes knowledge of reality." Santayana, *The Life of Reason*, vol. 1, pp. 141–2. Man does not consciously read his emotions and feelings into nature, that is, into that which he perceives. They are experienced in perceptual objects and color them from the start. His conscious task is, rather, their abstraction and withdrawal into the self. Natural Realism still remains, but the world of perceived things, regarded as independent of the percipient, has suffered a diminution in content. Desire and emotion are sucked out of it and assigned to the observer. It is the contrast between the original Natural Realism

of man and the enlightened, or more critical, Natural Realism of to-day which should be clearly apprehended.

The Standpoint of Non-Apprehensional Realism.—Having studied the development from primitive realism to that of enlightened common sense, it will be best to bring out very clearly the further development involved in the realism we have tried to justify in this book. I offer the following diagram as an aid:

The Field of the Individual's Experience

First Level

(Primitive Natural Realism)

Inner Sphere	Outer Sphere
sense of self	
attitudes toward	other things
a. theoretical	
b. practical	

At this level, the content of these apprehended things is full of tertiary qualities like pleasure and pain, joy, strength, effort, malice, goodness, beauty, ugliness.

Second Level

(Enlightened Natural Realism)

Inner Sphere	Outer Sphere
sense of self	physical things
attitudes toward	other minds
a. theoretical	
b. practical	
mental contents	

At this level, the inner sphere has become more complex with the definite assignment of much of the outer sphere to the inner. Ideas, percepts, concepts, feelings, etc., are now definitely thought of as mental. The outer sphere has been purified of elements which are considered mental. But the division is largely a compromise. For instance, apprehended objects toward which the theoretical attitude is taken are sometimes called percepts and sometimes physical things.

Third Level

(Scientific Realism)

The Individual's Mind or Consciousness	The Rest of Reality
sense of self	
attitudes toward perceptual objects	
a. theoretical	
b. practical	
conceptual intuition of	physical things
analogical knowledge of	other minds

This level is represented by the rationalism of Democritus and Descartes and also by the representative realism of John Locke. The individual's mind is contrasted with an independent physical realm and a plurality of other minds. Knowledge is either a peculiar rational intuition or a representation by means of concepts. The problem of knowledge is in the ascendant. The physical realm is thin in its content and reduced to what are called the primary qualities. The knowledge acquired by the physical, especially the mathematical sciences, is supposed to exhaust this realm.

Fourth Level

(Idealism)

The Individual's Mind or Consciousness	The Rest of Reality
sense of self	
attitudes toward perceptual and conceptual objects	
a. theoretical	
b. practical	
all sorts of mental contents	
analogical knowledge of	other minds

At this reflective level, knowledge of a non-mental realm is relinquished, and science is considered a construction within consciousness guided by the architectonic and organizing capacities of the human mind. Other minds are known only by analogy. This reflective level is to-day best represented by panpsychism. It must not be forgotten that this level is so artificial that it is reached by different thinkers in different degrees. We have had occasion to criticise objective idealism because of its appeal to a universal self. This level is unstable.

Fifth Level

(Non-Apprehensional Realism)

The Individual's Consciousness	The Rest of Reality
The field of the individual's experience with its distinctions.	
This includes apprehended objects (ideas)	
a. having no reference outside of his experience.	

b. given a reference outside of experience as knowledge about Nature
   a. the individual's mind
   b. the minds of other individuals
   c. bodies

At this reflective level, whatever is apprehended is seen to be mental. Yet it is realized that knowledge of a non-apprehensional sort can be gained of what is outside of the individual's consciousness. The solution of the mind-consciousness-body problem enables us to combine a, b, and c as nature or reality.

The Place of Values for These Levels.—We have seen that for primitive Natural Realism values are distributed naïvely throughout nature. "Thus the sun is not only bright and warm in the same way as he is round, but by the same right he is also happy, arrogant, ever-young, and all-seeing; for a suggestion of these tertiary qualities runs through us when we look at him, just as immediately as do his warmth and light. The fact that these imaginative suggestions are not constant does not impede the instant perception that they are actual, and for crude experience whatever a thing possesses in appearance it possesses indeed, no matter how soon that quality may be lost again." Santayana, *Reason in Common Sense*, p. 143. But at the next reflective level, the majority of these tertiary qualities have been withdrawn for the inorganic world; the only one left being, perhaps, charm or beauty. Physical things are not beneficent or malignant, for consciousness and desire are necessary for these characteristics. Hence vital

exuberance and ethical qualities are assigned only to living things.

At the second level, ethical characteristics are removed even from animate things below the level of man. It is seen that a knowledge of good and evil of some sort is essential to ethical distinctions like right and wrong. Also, the conception of a highest good as an end for which to strive is known to have conditions unrealizable apart from reason. The obvious conclusion is drawn that ethical values can have no meaning for any part of nature below the human level. But, as we have already pointed out, æsthetic values are more perceptual and less reflective in character. The æsthetic attitude is one of contemplation and so favors the retention of the attitude of Natural Realism. Things are beautiful, charming, interesting, delightful. Yet it is not long before reflection points out that human feelings, emotions, sentiments and associative processes giving meaning to perceived objects are fundamental. The result is a psychology of æsthetics which concludes that beauty is a value given by the resonance which a stimulus awakens in consciousness. The inference is that beauty is not a quality which can exist in nature apart from the human mind.

At the third level, it is seen that percepts are mental objects. This fact enables us to account for the intimacy of æsthetic qualities and judgments with perceptual objects. Both are mental, and we no longer wonder at the perceptual objectivity of æsthetic qualities. The scene from Stirling Castle *is* beautiful because all that I see is an effect in me of stimuli coming from outside as these are interpreted by my mind. Color is as mental as beauty, and so are form and outline as these are perceived. All we can say is that the æsthetic attribute of the perception

is traceable to mental factors more allied to the lower than to the higher senses. These mental factors are more variable, and it is for this reason that the color of an object and its form will not change for me while its æsthetic effect fluctuates disappointingly.

This conclusion is carried over into the next two levels of epistemological reflection without any essential change. Beauty is man's reaction to his environment. Glad he must and should be that his mind has developed this pleasant resonance to his surroundings; but reflection warns him against projecting it into nature in a literal way, just as it finally teaches him that the real world is not colored and heavy and odorous. Critical knowledge does not try to picture nature.

The Science of Axiology.—Philosophers are compelled to use technical terms in order to bring distinctions clearly before their minds. Of late, the recognition that judgments of value are fairly distinct from ordinary cognitive judgments has led to the growth of a new philosophical discipline called axiology or the theory of values. The normative sciences, or those which concern themselves less with fact than with standards and preferences and values, come under this general philosophy of worth. Thus, the latest German works on philosophy are almost certain to divide the field into *Wissen* and *Wert*. Under *Wissen* come the physical, biological and purely descriptive human sciences, while under *Wert* come ethics, æsthetics, economics, sociology and the philosophy of religion.

Judgments of value involve *preferences* on the part of the subject. And these preferences rest upon mental processes which are dominated by sentiment and desire rather than by conceptual analysis and synthesis. "Even the slightest skepticism shows that such value-predicates are

not assigned to things as their attributes or as relations involving only themselves, but that they first grow to things through their relation to a valuing consciousness." Windelband, *Einleitung in die Philosophie*, p. 244. The inference is that, apart from sentiment founded on feeling and will, worths do not exist. The recognition of this principle has led to a stress upon the study of the psychology of values. Thus axiology as a philosophical discipline is bound up with the investigation of feeling, desire, emotion and sentiment and with the methods by which orders of preferences arise along different lines like the æsthetic, the ethical, the economic and the religious. Not only are the different orders very complex in themselves but they often conflict among one another, as the ethical with the economic, and the æsthetic with the ethical. Much remains to be done along these lines, even though progress has been more rapid in the last few decades than for any time in the past.

The Objectivity of Values.—But we are concerned in the main, not with specific problems, however interesting, but with epistemology and metaphysics. Consequently, our chief interest in axiology is where it touches the objectivity of values. Are values objective or subjective? And what must we mean by these terms?

Values are relative to the individual because they are his judgments and so are based upon his character, constitution and training. This foundation has led to variations in the value placed upon things and acts so marked that "There's no disputing about tastes" has become a proverb. But, in spite of this admitted variation, there is undoubtedly much agreement. The exception strikes us just because it is an exception. We can at least say that people fall into groups with similar tastes and values.

But while judgments of value are, like all other genuine judgments, individual, we must never forget that individuals are conditioned by the influence of the other members of the group. My judgment is actually mine, but I may make it because I have had a certain sort of education and have been given certain suggestions by various members of society through conversation or literature. I know that others think about such matters in this way or that, and my judgment cannot help being influenced by this knowledge. Furthermore, my whole outlook necessarily reflects the experience of the race, for this seeps into me by every avenue of the senses as well as through the language with its distinctions. Yet my outlook is mine even though it is socially conditioned to such an extent that I am a mere echo of the group's history and present habits. After all, the group has no consciousness of its own; it has no brain and no mind. It is simply a name for individuals of a certain nature and training in causal interaction. It is a great, though easily made, mistake to talk about a social will or mind as something existent apart from the individuals in these actual complex relations with one another. My judgments are socially conditioned in this empirical sense and, to the extent that I believe that others will agree with me, socially qualified. I assign them automatically to others unless I have good reason to know that I am a dissident.

It follows that judgments of value are as objective, logically, as any other judgments. This object is beautiful just as it is red. But this type of objectivity does not signify that the physical world is in itself beautiful any more than that it is red. That is, the objectivity of judgment does not involve the truth of Natural Realism. The actual meaning of objectivity when applied to values can best be brought

out by seeking for a contrast term. To say that a value is merely subjective may mean that it is whimsical and temporary and accidental and arbitrary. The appeal, then, is to something more natural and whole-hearted, something that arises out of and expresses a wider and deeper experience. The objective is the expression of a more satisfactory synthesis of experience. Again, the subjective is the personal as the eccentric and bizarre. The term is applied even to the sincere judgment *of another* when it is felt that this judgment is out of the ordinary. In this sense, the subjective is the heretical. But the valuation adopted by the various members of the dominant group is not objective in any way which conflicts with the breakdown of Natural Realism. Values are not self-subsistent, nor are they in the world otherwise than as experience in the minds of particular individuals. They would have no meaning apart from a valuing consciousness. And just because they are expressions of human sentiments and desires, primarily, they are not a suitable foundation for knowledge about the physical world by itself. The place of values is in human life.

References

Ehrenfels, *System der Werttheorie.*
Höffding, *The Problems of Philosophy.*
De Laguna, *Introduction to the Science of Ethics*, pt. 3.
Santayana, *Reason in Common Sense*, chap. 6.
Stuart, *Studies in Logical Theory*, chap. 10.
Windelband, *Einleitung in die Philosophie*, 2nd pt.

INDEX

Abelard, 9.
Æsthetics, 14.
Agnostic realism, 155.
Albertus Magnus, 9.
Animism, 230.
Appearance, 32f.
Apriorism, 139f.
Aquinas, 9.
Aristotle, 7, 9, 234, 272.
Atomism, 218, 269.
Axiology, science of, 295.

Bacon, Francis, 10.
Being, and knowledge, 131, 223.
Behaviorism, 245f.
Berkeley, 21; and Locke, 57; and Natural Realism, 56f.; his animus, 58; his construction, 60; his disproof of representative realism, 58f.; his general position, 55; gaps in his system, 63.
Brain, theory of, 280f.

Categories, 72, 195; Kant's doctrine of, 79f.
Causality, levels of, 277f.; and purpose, 278f.
Common sense, 17f.
Consciousness, is a flux, 67f.; and knowledge, 115f.; and a transsubjective realm, 118f.; as extended, 203; displaces soul, 236f.; efficacy of, 282.
Correspondent variation, lack of, 34f.
Creative synthesis, 275.
Critical naturalism, 193f.
Critical realism, definition of, 119f.; reference for, 128.
Criticism, 142.

Darwin, 3, 272.
Democritus, 8, 174.
Descartes, 10, method of, 46f.; view of matter, 220.
Descriptive empiricism, 86f.
Discontinuity, 275.
Dogmatism, 141f.
Driesch, 276.
Dualism, motives for, 186f.

Empiricism, 140.
Energy, 227f.; conservation of, 213, 256.
Epiphenomenalism, 259f.
Epistemology, nature of, 11, 146f.; and metaphysics, 171.
Ethics, 13, 296.
Experience, individual's field of, 86f.; and the self, 95f.; distinctions within, 98f.; dimensions of, 98–101.

Galileo, 3.
Gnostic realism, 155.

Heraclitus, 8.
Historical approach, value of, 42.
Hobbes, 174.
Höffding, 179, 262.
Hume, 22; his position, 66f.; his attack upon mental substance, 67; his rejection of Berkeley's spiritualism, 69.

Idealism, definition of, 55; objective idealism, 149; subjective, 147; *see* spiritualism for metaphysical idealism.
Ideas, 101, 106.
Interactionism, 254f.
Internal relations, 278.

Judgment, defined, 124; two aspects of, 124; reference of, 126; and knowledge, 122f.

Kant, 7; and Hume's skepticism, 74; stresses conceptual knowledge, 75f.; his appeal to consciousness-in-general, 90f.; and apriorism, 139.
Knowledge, two meanings of, 76; and likeness, 107; an achievement, 111; involves judgment, 122f.; and individuality, 133; and assertion, 158; and truth, 157; as a utility, 169.

Leibnitz, 7, 178.
Locke, his position, 48f.; his view of knowledge, 50; his view of matter, 220.
Logic, 12; and knowledge, 125.
Lotze, 23.

Materialism, 173f.
Matter, 216, 227; naïve views of, 174.
Mechanism, 269; ambiguity of, 275.
Mentalism, 55.
Mental pluralism, 88; and solipsism, 89.
Metaphysics, definition of, 11; Cartesian, 46; and epistemology, 171f.
Middle Ages, 9, 10.
Mind, nature of, 229, 248, 265; primitive notions of, 230; in ancient philosophy, 233; in modern philosophy, 235f.; and consciousness, 238, 249; and body, 252f.
Monism, past failure of, 187f.
Morgan Lloyd, 247, 274.

Natural Dualism, 183.
Natural Realism, 18f.; recognition of, 21f.; and science, 23f.; not a system, 25f.; difficulties confronting, 27f.; attack upon, 30; and memory, 36.
Neo-realism, 152.
Non-apprehensional realism, 154; and truth, 169; distinguished from representative realism, 154.

Panpsychism, 181, 262.
Parallelism, 257, 283.
Perceived objects, 31; and individuals, 35f.; involve construction, 38.
Percept, definition of, 108.
Perception, physiological theory

of, 39; logical function of, 110f.; a means to knowledge, 117.
Phenomena, 78.

Philosophy, preliminary definition of, 1; and the special sciences, 4; older and newer conceptions of, 7f.; and Natural Realism, 23.
Philosopher, attitude of, 2; competency of, 5; method of, 6; and scientist, 3f.
Philosophical disciplines, general, 11f.; special, 12f.
Physical reality, 128, 201, 227.
Physical thing, 32.
Plato, 1, 7, 9, 234.
Political philosophy, 13.
Pragmatism, 164f.
Properties, 224.
Propositions, and knowledge, 117; and fact, 112.
Psychologist, purpose of, 242f.
Psychology, subject-matter of, 240; orthodox type of, 241; and behavior, 245f.; inclusive definition of, 246; paradox of, 244.

Quantity, and mathematics, 274; and mass, 226; and energy, 228.

Rationalism, 136, 218; mathematical, 273.
Realism, definition of, 151; kinds of, 151; primitive, 287.
Reality, and thought, 129; *see* being and physical reality.
Representative realism, follows Natural Realism, 43f.; rationalistic type of, 44; raises new problems, 47f.; doubts confronting, 52f.

Sciences, social and mental, 9; growth of, 9.
Sensationalism, 138f.
Sense, and imagination, 102.
Skepticism, 65f.; 143.
Solipsism, 130, 148.
Soul, 237.
Space, 195; mathematical, 199, as a category, 200, and consciousness, 203f.
Spiritualism, 177f.; two types of, 180.
Substance, Cartesian idea of, 220; as a category, 224.

Teleology, 271.
Theory of knowledge, *see* epistemology.
Thing, and thought of it, 103f.; and attributes, 221.
Time, kinds of, 205; as a category, 209f.; as change, 211; and consciousness, 214.
Truth, theories of, 160f.; as a cognitive value, 167; criteria of, 168.

Valuation, and knowledge, 284.
Values, place of, 293; objectivity of, 296.
Vitalism, revival of, 276.

Warren, 264, 273.
Wundt, 179.

Printed in the United States of America

THE following pages contain advertisements of a few of the Macmillan books on kindred subjects.

The Next Step in Democracy

By R. W. SELLARS, Ph.D.
Assistant Professor of Philosophy in the University of Michigan

275 pp., Cloth, 12°, $1.50

A sensible, moderate account of what may be called the new socialism. Instead of being sentimental and emotional, the author takes a realistic, evolutionary view of society. He points out that the older socialist theories were largely *symptoms* of maladjustments which pointed to the need for a more ethical spirit, and for a guiding principle, in accordance with this spirit. The author separates the essential from the unessential characteristics of the socialist movement, and reaches the conclusion that the socialist agitation has suggested a principle or attitude rather than a program. The next step in democracy will be a *softening of industrialism*, which is already beginning in such movements as co-operation and profit-sharing. The Great War is touched upon, and its deeper causes and probable consequences are considered. Finally, the universalization of democracy is taken up and the author maintains that democracy is an achievement and not a gift.

THE MACMILLAN COMPANY
Publishers 64–66 Fifth Avenue New York

The History of European Philosophy

By WALTER P. MARVIN

Collegiate Church Professor of Logic and Mental Philosophy in Rutgers College

Cloth, 12°, xv + 439 pp., Index, $1.60

The present work, a history of philosophy from the beginning down to modern times, has two distinctive features. It is written from a realistic point of view; and it contains a treatment of the development of the sciences.

The scholarliness and accuracy of the book, and the fact that it keeps close to real, human interests, and treats them in a concrete and interesting way, makes it a valuable textbook or second text for introductory courses in the history of philosophy.

The subject is presented in three separate sections, of which the first is introductory, the second covers the Greek and Roman Periods, and the third deals with modern philosophy. The chapter headings of this third part are as follows: The Atlantic Period, Medieval Thought; The Age of Discovery; The Modern Philosophical Movements; Rationalism and Naturalism; Phenomenalism, Positivism and Idealism; The Doctrine of Evolution; Romanticism; Present Philosophical Tendencies.

THE MACMILLAN COMPANY

Publishers 64–66 Fifth Avenue New York

Introduction to the Science of Ethics

By THEODORE DE LAGUNA
Professor of Philosophy in Bryn Mawr College

Cloth, Crown 8vo, xiv + 414 pp., $1.75

An outline of the science of ethics as it is found today, and also an account of the past which has made it what it is. Part I is devoted mainly to a discussion of the subjects of moral judgments, and a survey of the various kinds of standards according to which, under the conditions of savage or of civilized life, moral judgments are made. It thus presents a broad background of facts against which the explanatory theories, old and new, may be better appreciated. Part II is an interesting and instructive review, not a complete history, of the principal Greek and English ethical theories. In Part III a positive treatment of moral problems is presented in connection with the elements of the general theory of values. This is the first attempt at an elementary presentation of any of the newer phases of the theory of values which in recent years has undergone a great development, and one of unusual interest.

THE MACMILLAN COMPANY
Publishers 64–66 Fifth Avenue New York

A Student's History of Philosophy

By ARTHUR KENYON ROGERS
Professor of Philosophy in Yale University

Revised edition, 511 pages, 8vo, $2.00

A feasible and practical introduction to the history of philosophy suited to the mental development of the college student. It gives an accurate account of philosophical development which includes all the material that can fairly be placed before the student beginning the study of this subject. The chief aim is to gain simplicity of statement without losing sight of the real meaning of philosophical problems. Throughout, the author has borne in mind the viewpoint of the student, a feature which has contributed greatly to the success of the book. Wherever possible, the thought of the writers has been given in their own words, thus combining a practical source book and a fully developed narrative history in one volume. Although the author recognizes that the history of philosophy centers about the lives of individual men, he has made his book distinctly a history of philosophy and not of philosophers.

"There are many such treatises, but in none of them, we believe, is the subject so briefly, thoroughly, and clearly treated as in this. Former generations of college students had to encounter the difficulties of Schwegler, who, although well translated, was too Hegelian in his point of view, as well as in his vocabulary, to be altogether intelligible to the uninitiated. But Professor Rogers, in less space, and in much clearer language, has presented in an orderly manner the doctrines of philosophers from Thales to our own American teachers. Next to the comprehensiveness of the treatment and the clearness of the exposition, the most remarkable characteristic of the book is the accuracy of the bibliography, which is subdivided in such a way that one has references at the end of every chapter."—*The Nation.*

THE MACMILLAN COMPANY
Publishers **64–66 Fifth Avenue** **New York**

AUG 14 1970